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GLEANINGS

A JOURNAL DEVOTED TO BEES AND HONEY AND HOME INTERESTS

BEE CULTURE

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DELOS WOOD, p. 399, may be all right to add extra story *above* in California—too cold here.

MR. LITTOOV seems to jingle the shekels a long time over a sale (see p. 396). Sept. 20, 1894, he was jingling the same jingle in *Am. Bee Journal*.

ADRIAN GETAZ thinks I'm a little wild in figuring on the amount of Manum's feeding, for in his "locality" sugar was worth at that time 10 to 15, instead of 5 cents.

THE DESIRABILITY of a uniform system of grading is only exceeded by the difficulty of its attainment. [But I believe we are getting closer to it, as the picture scheme is going to solve the difficulty.—Ed.]

"THE PLOT THICKENS!" Onions drive sitting hens off the nest in Medina In Marenngo, hens stayed on and chickens came out all right with onions in the nests the last two weeks of sitting. Matter of "locality"?

IN GERMANY a good deal is made of giving bees water in winter. I've tried several times to give my bees water in cellar, but they wouldn't touch it. Dr. Mason says his take it greedily. Wonder what makes the difference.

"BLACK CLOTHING and the aversion with which it is regarded by the bees receives further consideration in GLEANINGS; and it does seem as though the testimony given in proof of this aversion is incontrovertible," says Editor Hutchinson. [Please ask R. L. Taylor to paste this paragraph in his hat.—Ed.]

DO BEES consume more stores when they have honey-dew? Some of mine starved with what I supposed were sufficient stores. [A few years ago, I believe, it was agreed that the bees would consume less good stores than of poor. Has there been any thing to change that opinion? I do not remember.—Ed.]

ABOUT HALF the colonies I put in cel'ar last fall are now dead. Honey-dew. Besides, I

waited for them to have another flight after Nov. 4, and then took them in Nov. 24 without the flight. [A loss of 50 per cent! My, oh my! and yet I fear that many another has lost as many, but from motives of pride they say nothing about it.—Ed.]

HERE I AM, up on the fence again, looking for the best place to alight on the boiling-foul-broody-honey field. [I believe, doctor, you are waiting for me to shove you off, or, rather *pull* you off, on my side. But, haven't I pulled? Come, now, is there any good reason why you should stay on the fence any longer? —Ed.]

ON MY RETURN from Illinois Sunday-school convention I sat with editor York and his efficient helpers around his festive board, or, rather, at one side of the board, for the board was up against the wall in the printing-office, and the noon-day lunch tasted all the better because the fair hands that prepared it had been setting type just before.

YOU'RE RIGHT, Mr. Editor, that alternating sections in a super will not always produce decisive results. There's also trouble in having one side of a super filled with one kind of foundation and the other side filled with another, for sometimes there's a marked difference in the working on two sides resulting from a difference in the brood-combs below. I think I'll try both ways.

THE U. S. PURE-FOOD investigation is stirring things up lively at Chicago. Senators Mason and Harris and Prof. Wiley had Editor York on the stand for the greater part of one session, and he was well loaded with solid facts that were corroborated by H. F. Moore and Mrs. Stowe. The testimony will be printed in full in the report to Congress, and it will be nothing strange if some laws are enacted that will not make the way any smoother for adulterators [The Pure-food Investigating Committee got hold of the right men; indeed, it could have hardly secured better ones. Let the good work go on.—Ed.]

"HE, SHE, OR IT." Which shall we call the worker bee? The choice is certainly between 'she' and 'it.' There are some arguments for both, but it seems to me that 'it'

gets the best of the argument." So says Editor Hutchinson. [Our A B C of Bee Culture, now in process of revision, is having all of its pronouns of the masculine gender, referring to individual bees, changed to neuter.—ED.]

IF BEE-GLOVES are worn, I believe those new ones of canvas with linseed oil are fine—away ahead of rubber for comfort, and bees never offer to touch them. The only objections are the smell, and the seams that hurt the hands. A bee-keeper at my elbow prefers hogskin on that account, but to me the smell of the hogskin is horrible. Pooh! [Yes, that is what I thought about those hogskin gloves when I was at your place the last time. ED.]

COFFEE is a good honey-plant in the island of Jamaica; and the bees seem a good thing for the honey crop. A writer in *Bee Chat* says, "I have of my own, 100 colonies of bees located around the coffee-drying ground, and for the past two crops *there has been no light coffee at all*; while on estates only eight or ten miles away they had forty to fifty bags of light coffee. Of course, the bees did it." [I would give something to get a sample of honey from the coffee-plant. It must have a decidedly pleasant flavor to one who is a lover of coffee; but at our house I drink the cereal coffee in place of the real article—not because I do not like coffee, but because it does not like me.—ED.]

AFTER ALL that has passed, it's hard for Stenog to get past that "past." Now tell us, Stenog, when a man is talking, how do you distinguish between "passed" and "past"? and when the same thing is printed, haven't you precisely the same means to decide? If you read to an audience, "The law was passed the past year," will they understand it a whit better than if you read, "The law was past the past year"? And be sure to tell us how you distinguish between the two words when you read what you've written in stenographic characters. [Answering in order, I will say the ear detects the difference, I think. The words are alike in shorthand. Why don't you spell it *passt* instead of *past*? Are we to spell *locked*, *loct*?—ST.]

CLARK A. MONTAGUE says in *Review* that in Northern Michigan their first *sure* source of surplus is crimson clover, filling the gap after fruit-bloom, and worth more than all the other clovers combined. Last year from crimson clover alone the stronger colonies each filled a super holding 8 L. frames. [Crimson clover is not a sure crop, by any means, with us, because the farmers have not learned the art of raising it. We grow it on our honey-farm, and it grows luxuriantly; but our fields are not large enough to produce any perceptible effect in the hives; but the way the bees do work on it is a sight worth beholding. As Mr. Montague says, it comes just between apple-blossoms and clover—just when it is most needed.—ED.]

I AGREE with Stenog that "to leave off the address seems to rob an article of much of the interest that is due to personality and location." And it's an improvement in many

cases to have the county instead of the post-office; easier to locate Onondaga Co. than Borodino P. O., and Hancock Co. than Hamilton P. O. [But if you have the postoffice you have the county too, don't you? Maps and directories are so cheap now that I assume one can as easily learn that Marengo, Ill., is in McHenry Co. as that May 25, 1899, came on Thursday. But suppose a man greatly desires to address you, but simply knows your county—how can he do it? Of course, you might thus escape a big bore, and may be not.—ST.]

ALL RIGHT, Mr. Editor, we'll not "discuss infelicities of expression any more." That's the reason I make no reference to the "vicious trick" and "coarse insinuations" mentioned on p. 346, to which you will not allow me to make reply. [I intended in my footnote, p. 346, to give notice that I believed it would be to the best interest of all parties concerned to draw this discussion to a close. I can not think that discussions relating to the meaning of words, or grammatical discussions, should be allowed to go on in a bee journal, even when good well-meaning men are engaged in them. If, on the other hand, valuable facts on bees are being uncovered, I should be heartily in favor of letting the discussion go on, even if some one did feel that some of his tender corns were being trampled on.—ED.]

"IT IS GENERALLY considered that, for successful wintering, there should be no pollen or bee-bread in the combs" (p. 400). Are you sure about the "generally," Mr. Editor? If so, I'm skeptical as to the correctness of the general consideration. [Some twelve or fifteen years ago, when this discussion was up, if I remember correctly it was agreed that it was desirable to have little or no pollen in the brood-combs filled with stores. Some even went so far as to say that they did not even want honey—that they preferred exclusively sugar syrup without a trace of pollen. Perhaps I have misinterpreted the consensus of opinion that was rendered about the time that I began to take hold of the editorial helm of GLEANINGS. If I am wrong, doctor, twist the helm around a little until it points right.—ED.]

I COVERED the labels under those pictures, p. 293, and took the separate testimony of three persons. One of them agreed with the classification on the page, one thought both No. 1's better than the fancy, and one thought the fancy better in one case and the No. 1 in the other. I confess it would be hard for me to decide, and I certainly would not grade as fancy a section having on one side 15 unsealed cells away from the wood. [The section designated as "fancy" was actually better filled out at the corners than the one marked No. 1. The trouble was, the photo did not show the real distinction; but if you will take another squint I think you will see the difference. Another thing, you must not lose sight of the fact that Niver said that all the pattern sections must be *under* the average of those for each grade; so that the fancy, No. 1, and 2, would look better than the models we had set before us; but I confess myself that I should

have preferred to have had *more* difference between the "fancy" and the No. 1; but as it was long after the season, our friend Niver was not able to secure such distinctive specimens as he desired.—ED.]

"THE DISCOLORATION goes clear through the capping of so-called travel-stained honey," or words to that effect, may sometimes be heard. I arise to say I don't believe that the cappings are often colored clear through. If so, why the common advice to take sections off early, before the bees have time to darken them? I do know that in this "locality" bees cap sections white, and they become dark afterward. But the bees' feet have nothing to do with it. [About a month ago I lifted the cappings of a large number of travel-stained sections; and we had on the floor at that time something like 5000 or 6000 pounds of honey, much of which was travel-stained. I went over dozens and dozens of sections, and I think that, in nearly every case, the stain went clear through the capping. The fact of the matter is, there are two kinds of travel-stain—or, at least, so I think. One is the *real* travel-stain, of which you speak, and the other is the more common, the discoloration resulting from foreign particles such as propolis, strings, old dark wax, and dirt, incorporated in and through the cappings. Suppose, doctor, you look over some travel-stained honey. Lift the cappings, and see how large a per cent of the stain does not go clear through. Perhaps this is a matter of locality; but the honey I referred to came from the east and west, and from all over. J. E. Crane, when here, went over this same honey, and it was he who called my attention to the fact that the stain was not on the surface, but clear through.—ED.]

THE NESTOR of superintendents of city schools in this country is, I think, Prof. E. A. Gastman, Decatur, Ill. For 38 consecutive years he has been in the public schools of that city, and its superintendent ever since it had a superintendent. On a delightful visit at his home he told me he had never made much money out of bee-keeping (I think he never reached 100 colonies, and his location is poor), but the delightful outdoor work had kept him in condition for going on with his work when others were worn out. I think he's about 65 years young. [The doctor might have said, that, had it not been for the bees, he probably would not have been among us now. Years ago, if I make no mistake, he gave up a lucrative position, having a fat salary attached to it, on account of his health. He preferred a smaller salary, God's pure air, and a longer lease of life. And he got them. The bee-keeping fraternity can rejoice that we have so many professional men in our ranks. We have our lawyers, doctors, members of Congress, and our senators, school-teachers, professors in colleges, many of whom have been driven to bee-keeping as a pleasant and profitable pastime. Such men in our ranks have done much to enrich our literature and exalt our calling. Is there any other rural pursuit that can show such an array of talent?—ED.]



Our jolliest tune we sing in June
While we gather our winter stores;
Buckwheat and clover we're flying all over
When rainstorms don't keep us indoors.

BEE-KEEPERS' REVIEW.

Wood ashes around hives are said to be a preventive of black ants.

F. A. Gemmill says the greatest amount of wax he has been able to secure from a set of eight Langstroth combs is 3 lbs. Mr. J. B. Hall shows a similar result. Mr. Gemmill used a Hatch press, a view of which is given.

Honey for horse feed is a new fad. Mix it with his common feed, and you will see what sort of coat he will get. Quite likely it will render the horse sleek and fat. Sugar has a similar effect. In an eastern city I once noticed that draymen for sugar-refineries carried sugar in their coatpockets, and fed it to their horses on the boat, and the horses were remarkably smooth.

A fine view of the beautiful residence of Mr. R. McKnight, of Owen Sound, Ontario, graces the May number of the *Review*, also a picture of Mr. McKnight himself and of a "promenade" near his orchard. The pictures give one a restful feeling. By the way, Mr. M., who is that woman coaxing a dog to stand on his hind legs in one picture, and holding him in the next when he is tired out? and that one trying to push that huge tree over? Mr. McKnight writes a very able article to show that honey-dew is the exudation of plants, and not that of plant-lice, etc., often found in great numbers sucking it up. His position is that of Mr. Cowan, and vigorously opposes that of Prof. Cook. Mr. McKnight is one of the most interesting writers among bee-men. I think this one article is worth all the *Review* costs for a whole year.

PROGRESSIVE BEE-KEEPER.

R. C. Aikin has just passed through a political campaign in which he was not only a worker but was on the ticket, and is now in for it to serve his little city as councilman for the next two years. He adds, "May the Lord help us to rout every whisky-selling scheme that dares to ply in our midst." The traditional "amen" is in order just here.

Mr. J. H. De Myer says if he were to start in the bee-business again he would use a 10 L. frame, self-spacing, $\frac{3}{8}$ inch to center of frames, or wider top-bars than the thick-top Hoffman, and staple end-spacers, two supers for each hive, and a few extra ones to be used when needed. He would have one of them regular size for half-depth frames, and the other five inches deep for comb honey.

G. W. Williams writes a very strong article in refutation of the theory that queens lay in queen-cells, Mr. Doolittle claiming that the theory is fully established. Mr. Williams says: "Mr. D. dare not say he ever saw a queen deposit an egg in a queen-cell. If she does this, as he claims, with the number of queens he has raised, and as long as he has kept bees, had he been at all observant he would certainly have seen this performance." Mr. Doolittle is accused of trying to strengthen his position by the use of the Bible language, "To multiply and replenish the earth." To this Mr. W. replies, "I know of no controversy on the multiplying question. It is as to one particular point how it is done. Bees multiply, and they have their way about it; but it is not done by the queen's pushing the work any more than to lay an egg out of which the bees *can* make a stepmother." The whole subject is interesting, and is ably handled by Mr. Williams. The points really at issue, it seems, are these: Mr. Doolittle claims that queens may and sometimes do lay directly in queen-cells, while Mr. Williams claims they *never* do, but says the bees carry an egg and put it into a queen-cell and then develop it into a queen. I do not see that Mr. Doolittle denies that such is *usually* the case.

W

AMERICAN BEE JOURNAL.

Honey a cure for smallpox is highly recommended by a correspondent in Mexico. He says the report as to the efficacy of honey for that dreadful malady is true. He adds that in Mexico the smallpox comes nearly every year, when the rainy season ends. The honey cure was published in nearly all the papers, and for that reason he sold his honey as soon as he got it. Mr. Dadant advises all the bee-papers to publish this; for, he says, if honey proves to be a good medicine for smallpox it will be a great help to mankind and also help the bee-keepers to dispose of their crops.

W

In an essay read at the Wisconsin bee-keepers' convention, the president, Mr. F. Wilcox, referred to the declining price in honey for the last twenty years. He says that in 1881 the price of comb honey ranged from 14 to 22 cts., and extracted from 8 to 10. In 1897 comb honey was 8 to 12 cts., and extracted 4 to 6. Mr. W. thinks the diminished profits of other pursuits have induced many to engage in bee-keeping who would not otherwise do so, and these help to drag prices down. Is it not likely that the selling price of honey, like that of butter, depends almost entirely on its appearance? Some comb honey was received here at the Home of the Honey-bees last week. The comb was next to snow in whiteness, and the whole appearance of the product was "Fancy A No. 1 gilt edge," etc. It was offered at the price of 20 cts. per section of about 14 ounces. It was all taken instantly, even at that price, and so the writer, like mother Hubbard's dog, "got none," except a little that leaked out. I would gladly pay 25 or even 30 cents for such honey all the time. I am confident that al-

most any amount of it could be sold in the cities, to a certain class who care nothing for money provided an article suits them, at 40 cts. a section. Of course, not all can produce such honey; but so long as the poorest regulates the price of the best, just as the worst boy in school "regulates" the morals of the rest, it behooves somebody to see that the poorer grades are improved.



APIS DORSATA CAUGHT AT LAST.

An Interesting Account of how a Gleanings Correspondent Climbed a Tree and Captured the Giant Bees; Their Beauties Extolled.

BY W. E. RAMBO.

Mr. E. R. Root:—I herewith inclose you the result of the correspondence with the "Pioneer" referred to in a previous letter. The editor thought better to refer me to some source of information than to publish my request, although he agreed to the latter if I desired. The extract from the "Dictionary of Economic Products" was kindly sent me by the Secretary of the Bombay Natural History Society. It will speak for itself. I also learn that at one time a gentleman published a work on bee keeping in India, but it is out of print. I suppose it would not likely add any thing not in the extract sent you about *Apis dorsata*.

About half a mile from here I have at last found *Apis dorsata*, a single colony. They are in a very large tree, about sixty feet from the ground, on a branch about five or six inches through, with absolutely nothing to stand on, or any means of approach except the limb itself. I have succeeded in climbing within thirty feet (guesswork) of them, and about ten feet below, and have taken a photograph of the nest, the negative of which I send you, and also a print or two, if I can get the latter ready in time. I have arranged to go to-night to get specimens of them, if it is at all possible, and to hive them also if I can. If I can do one it is probably possible to do the other. The photo had to be taken at an angle, and so does not show the actual shape of the comb, which is rather longer than wide. Judging from the appearance at a distance, I should say that the actual size is about 20 to 24 inches long by about 15 to 18 or 20 wide, width counted perpendicularly. This is not very accurate guessing, but the best I can do. If I can get near enough to the comb, and find opportunity, I shall get the exact measurements. The photo of the nest is not very useful, on account of its size. I couldn't get any closer. I did my best to get a clean negative, and think it may stand enlargement. I wanted to get close enough to show the shape of the bees, so that an enlargement

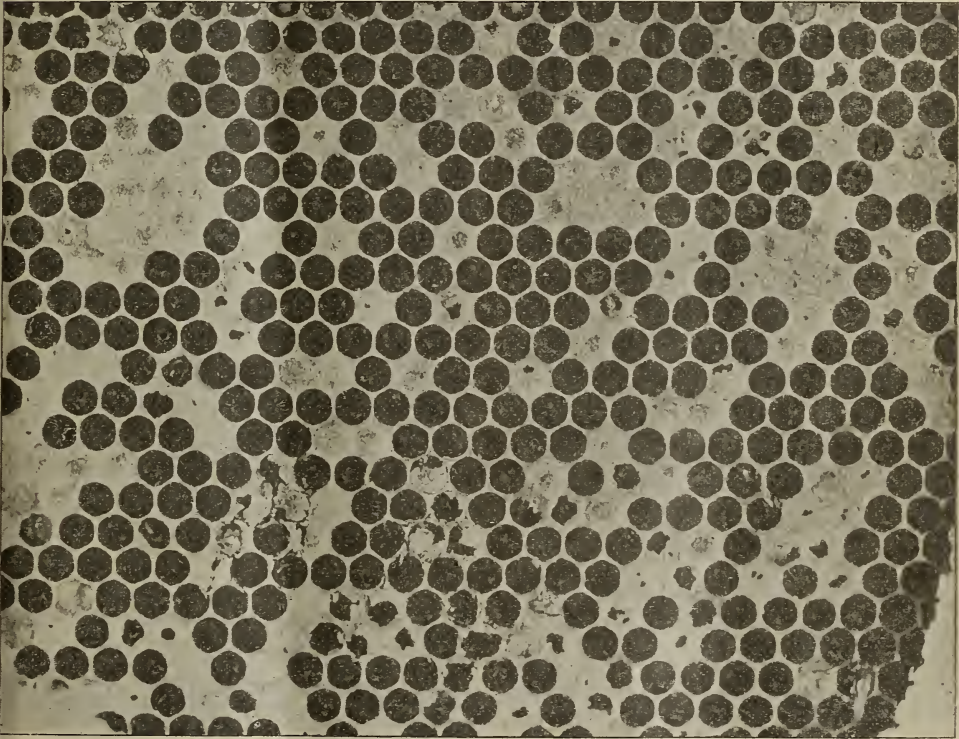
would bring them out individually. This, I fear, I did not succeed in doing. However, I send what I have obtained.

If the bee-friends could but see these beautiful bees as I saw them through field-glasses they would want to have them, if only for their beauty. At thirty feet they seemed about an inch long, and every bee looked like a five-banded Italian queen. The comb was completely hidden by the bees. They looked so innocent as to make me itch to catch them in my hands. Doubtless I should have itched worse if I had done so. But they were beauties.

Here I leave this epistle till I see what is the result of to-night's raid. Said results may be too late for this week's post.

so that Mr. McGavran may take them to you. He sails from Bombay Saturday.

I spent from 9:30 last night till 4:30 A. M. in the tree. It is the hardest job of climbing I ever tried. I could get no climbers, as it is impossible, almost, to get any thing made here, and our tools are not yet here; so I had to engineer my way up with ropes and make-shifts. Once up, I had to drag up poles and build a platform on the branch the bees were under, and another; then I could just get to the nest with outstretched arms. Perhaps worst of all I had to guess at what was best to do, as I had never handled *Apis dorsata*, and had no instructions. So I let in on them with mixed wood and tobacco smoke from



A GOOD SPECIMEN OF FOUL BROOD; PHOTOGRAPHED BY THOS. WM. COWAN. SEE EDITORIALS.

April 13.—I will try to get you a word in time for this post. I found at last that my cyanide for killing specimens was all gone. I caught a number in a bottle, borrowed the hospital assistant's keys (the doctor is away from the station) to get some alcohol I knew of, and can not find that. That was at 5 A. M. Since that I have sent for the hospital assistant twice, and he was gone both times (the second time just now), and in the mean time he has been after me, and found me asleep, and did not waken me. I am anxious to get specimens in alcohol by to-day's train,

above, thinking that they might, having no retreat, just sit still and let me stupefy them and sweep them into my sheet. Naturally I suppose I smoked the strongest from my way; and as they retreated, instead of standing fire, they crawled away from me and stopped out of my reach on the branch, leaving the comb bare. I think I got about half of them, and fear the queen was in the other lot, but do not know. I did not succeed in seeing her. Having let down the bees I had caught, I drew up another sheet and held it by the corners and cut the comb off into it. It was thirty

inches by about fifteen deep. I was congratulating myself upon my successful work on the comb, when, without any slipping of the cloth, the greater portion of it went crash on the ground below, and was made into jam. I lowered the rest carefully, and found that I had enough sealed brood to fill the depth of one section (L. frame), and nearly its length and nearly half of another. I also gathered up scraps enough of the broken lot to fill a third, and then I placed in the corners of the hive considerable material that Italians would work over. I put in only three frames, so as to give them all the air-space they would need. Thus I left them. If the queen is with the hive party, there is a chance of their remaining. This is the story up to date. I got the alcohol, but it is nearly train time.

Damoh, C. P., India.

[The following is the extract referred to:]

EXTRACT FROM DR. WATTS' DICTIONARY OF THE ECONOMIC PRODUCTS OF INDIA.

Group I.—*Apis dorsata*.

Description.—The bees of this group differ from *Apis mellifica* in being larger; in building $4\frac{1}{2}$ cells to the inch; in the shape of the abdomen; in having 13 rows of bristles forming the pollen-basket; in the relative positions of the eyes and ocelli, and in a very slightly different arrangement of nervures of the anterior wings. It would seem that this bee does not build larger cells for drones than for workers, and that the drone is similar in shape and size to the worker, differing principally in the head, which resembles the head of the drone of *A. mellifica*. It builds one large comb, 3 to 5 feet long, 2 or more deep. The brood-comb is $1\frac{1}{4}$ inches thick, and the store-comb much thicker. Although both *A. dorsata* and *A. florea* are normally single-comb bees, under exceptionally favorable circumstances they build a second comb and their single combs are built much larger than otherwise usual; e. g., *A. dorsata* building in rock cavities; and a comb of *A. florea* built in a dwelling-house was found to be about 5 feet in area, in addition to being in some places double, the comb of this bee being usually single, and perhaps less than one foot in area. Probably in all these very large nests there are several queens, and they are not comparable to single stocks of *A. mellifica*. The arrangement of the stores and brood is the same as in other species. *A. dorsata*, as found in India, is exceedingly constant in size and color. It is found in forests, but frequently builds in town. It is reputed to be very vicious; but unless disturbed it does not attack, and could be handled by some of the measures usually employed by bee-keepers.

Habitat.—*Apis dorsata* is found all over India, but not at great heights above sea-level. It is said to be found at 2000 feet or more in Bhutan, but may justly be termed a tropical insect indigenous to the plains.

Economic information.—The large size of the comb and bee has excited hopes of this insect proving, under cultivation, of great economic value, and European bee-keepers have

endeavored to obtain stocks of it. Mr. Benton, a dealer in foreign bees, went to Ceylon for the purpose; but he was unfortunate in his efforts, for the queens died. He states he does not consider them so vicious as reputed, when once hived, but he gave up the attempt to cultivate the species. Several years previously, the writer undertook to obtain stocks, if likely to prove useful in Europe, but did not hive any, as it was considered better first to investigate the economic value of other Indian species. The reasons against any attempt to cultivate *A. dorsata* in hives are: 1. It builds naturally in the open; 2. It builds normally only one comb, so that the honey can not be removed without removing the brood also; 3. Although it builds a very large comb, this one comb is not so great in cubic capacity, normally, as the combs built by a stock of *Apis mellifica*, which is readily cultivated and well understood already; 4. It is found only in a tropical climate, and in this respect differs from *A. mellifica* and *A. Indica*, the most productive varieties of which are apparently indigenous to localities having more or less severe winters. *A. dorsata* probably might be cultivated in a semi-wild state in the forests, and the produce largely increased by this means. The present practice of indiscriminately robbing every stock found of all its comb, stores, and brood, might be replaced by a more rational mode of procedure; for, although not hived, many of the processes applied in the economic management of *A. mellifica* might be applied to the semi-wild *A. dorsata*. The bees might be fed to stimulate breeding or to prevent starvation. Excessive swarming might be interfered with. Certain stocks might be selected to breed from, as in the old style of bee-keeping. It might be found practicable to remove only portions of the comb, and the bees might be induced to build on or in artificial structures more accessible than the branches of trees.

Large quantities of both wax and honey are taken in the forests from *A. dorsata*. This wax appears to be bought by dealers, and some is exported. The honey is sold and mostly consumed locally, but is commonly of very inferior quality, being contaminated with pollen, the juices of larvæ, etc. It is also commonly thin, and liable to fermentation. The use of a simple extractor, care being taken to ripen when necessary, and to grade it instead of mixing good and bad together—these and other simple improvements would greatly increase the value of the honey. It appears highly probable that most of the honey produced by bees building in open air is thin, and requires ripening by evaporation to remove its liability to fermentation. Out of 60 to 70 specimens sent to the Calcutta exhibition, very few were free from fermentation.

[Our readers will remember that Mr. W. E. Rambo, a missionary from India, visited us a year or so ago. Knowing that he must be in the region where these giant bees live, and as there was considerable objection at that time against urging the government to import these bees, I asked Mr. Rambo if he did not think

he could secure them when he returned. He thought he could.

While he was here I took pains to instruct him in regard to *Apis mellifica*, how to handle them, and when he left for India we sent with him a shipment of hives in which to have *Apis dorsata* and *Apis Indica*. Mr. Rambo had been unsuccessful in finding these bees up till within a very short time; but now it appears that success in a measure has crowned his efforts at last. Even if he did not get all the bees, he has learned something of their habits; that they are not particularly cross, can be handled, as is evident from the fact that he says nothing about their being enraged or of his being stung. Situated as he was they could have made it very uncomfortable for him, to say the least.

The negative that he refers to, I am sorry to say, came smashed in pieces; so if a print off this negative comes to hand I shall have it enlarged and present it to our readers at the earliest opportunity.

There are many of us who would have liked to have the sight of these bees that Mr. Rambo had; and now that he has become a little better acquainted with them, I feel sure he will succeed in giving us a close photographic view of a colony; and if we can get a photograph *once in our hands* we will show them just as they are in their natural habitat, in all their native beauty and glory.

I shall watch eagerly the next mail from India in hopes that Mr. Rambo has the half with the queen; if not, I am in hopes that he can make that half raise one, and thus place us in position to know whether they can be confined in a hive in their own climate.—ED.]

QUEENS FROM OLD LARVÆ.

Queens Reared by Nature vs. Queens Reared by the Doolittle Method; some Misconceptions Corrected.

BY DR. C. C. MILLER.

On page 725 of GLEANINGS for 1898 I said, "I know it is a quite commonly accepted belief that bees left to themselves select larvæ too old for the best queens; but it is high time to lay such beliefs aside. The truth is, they don't make such mischoice; and if they did, such old larvæ would emerge as queens later than their younger sisters. A larva chosen at the time of weaning, at three days old, will emerge a perfect queen at an earlier date than any other larva either older or younger."

So many have taken me to task for saying that, and it has withal been done in so kindly a spirit, that it would be a real pleasure to say, if I could say it honestly, "Brethren, I was all wrong from top to bottom; didn't know a thing I was talking about, and I take it all back." Now, suppose we talk it all over in a dispassionate manner and see if you can't let me off without making me take back *every* thing I said, for I am sure I can rely on your goodness of heart not to want to humiliate me more than is absolutely necessary.

In the first place, haven't some if not all of you been reading into my article beliefs I never held? If some one who had never read what I had written should read the replies that have been made, I think he would be likely to understand that I had said something like this:

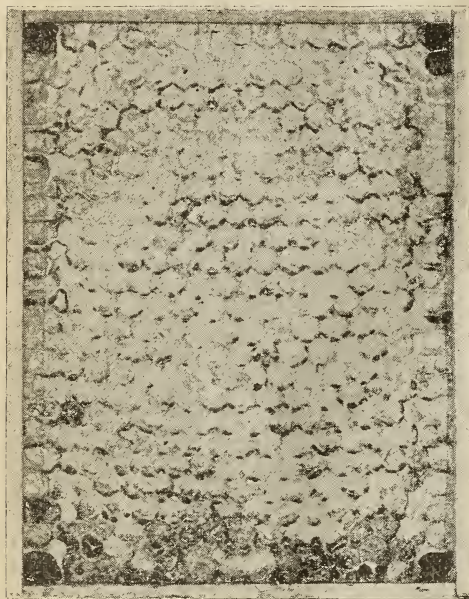
"If you take away a queen from a strong colony, and the bees start 20 queen-cells, and you let the 20 queens therein contained come to maturity, and give them to 20 colonies, the results will be as good as if you had reared the 20 queens strictly after the most approved style recommended by Doolittle." Now, friends, please, friends, I never said any thing of that kind—never thought any thing of that kind. If you had asked me what would be the comparison between such two lots of queens, I would have said, "Doolittle's 20 will be worth ever so much more than the other 20, and you couldn't get me to put the latter in 20 colonies if you'd pay me \$20.00." Don't you think I'm as orthodox as you are on that point? And I think you'll not find any thing I said to conflict with such view.

Being satisfied on that point, I suppose you would like me to say that I indorse the venerable tradition that, when bees are suddenly deprived of a mother, they are in such haste to rear a successor that they select larvæ too old to make a good queen. In some cases I am glad to rise up before the hoary head, but not in this. That venerable tradition is a libel on the bees. I believe that in all cases a queenless colony when starting a queen-cell will choose the best material it has on hand. If it has nothing better it will try to make a queen out of a drone larva, but I don't think you'll ever find it trying to make a queen out of a drone larva when it has larvæ of the other kind. If it has nothing better on hand, it will use worker larvæ too old to be good, but I think you will never find it choosing such if it has younger on hand. I think I need not repeat what I said on page 725 to show that, if larvæ more or less than three days old should be chosen, they would be later emerging from their cells than those only three days old.

Some of you will now say to me, "But I have seen with my own eyes bees taking larvæ almost ready to be capped over, and trying to make queens out of them, and you have just said yourself that you wouldn't use the 20 queens selected by the bees if you were paid \$20.00." That's all very true, my friend, but that doesn't militate against the fact that, when bees make the selection, they select the best they have on hand. The trouble on your part is that you have lost sight of another fact that plays an important part. Nature is prodigal in her provisions. She is not satisfied with a single blossom for each intended apple, but millions of blossoms bloom without fruit. For every drone needed, thousands are reared. When a queen is needed, a number are reared. Not content with what cells are started in the first place, the bees start others later on. In this latter case, if they have nothing better on hand, they must perforce use larvæ too old.

Years ago, impressed with the importance of having larvæ not too old, I thought I'd make a sure thing of it by taking away every

thing in the way of brood, and giving a limited number of eggs from a choice colony. I reared some fine queens, but I was puzzled and chagrined to find that some were abortive affairs of the most miserable character. A little observation showed me that only part of the cells were started in the first place, the remainder being treated as worker larvæ, and



FANCY COMB HONEY, ACCORDING TO NIVER'S GRADING-RULES. SEE EDITORIALS.

after they had become too old as worker larvæ the bees wanted to start some more queen-cells, and these too old larvæ were the best they had.

Right here let me call your attention to a little kink in the Doolittle method, that you may not have thought of, and that kink gives the method great superiority. The cells are given as royal cells to begin with. They can not be treated as workers for a time and then turned into royal larvæ. The bees may empty the cells in some cases; but if they're fed at all they're fed royally, and fed so from the start. So if you are intending to use *all* the cells that are started, the Doolittle plan is away ahead.

On page 921 is an interesting article from R. C. Aikin, in which he gives the result of large observation. The editor seems to hope that the reading thereof will tend to convert me from the error of my ways. Why, my dear friend, don't those observations only confirm what I've said? His observations are such that he concludes that, when colonies are deprived of their queens, the majority start with larvæ "not over four days from the laying of the egg," and "that by far the larger per cent were reared from selections made inside of five days from the laying of the egg." That is, the larvæ were one or two days old.

The earliest date at which he found queens emerging was ten days after unqueening. These cases were very rare, but you will see that they still allowed time for the larvæ to have been selected before they were weaned. (To the novice I may explain that worker larvæ are fed for the first three days on the same pap as the royal larvæ, and are then weaned and put on a coarser diet, while the royal larvæ are continued on the same food throughout.) The latest was 15 days after unqueening, in which case there is the possibility that the egg was laid not more than a day before the unqueening, and was never fed any thing but royal jelly. I suppose that Mr. Aikin means that these were the dates at which the first young queen in the colony emerged when all were left in the hive. If he had taken all the cells and put them separately in nuclei, I think he would have found some later than the 15th day, such having been chosen, not with the first lot, but later on.

Mr. Aikin says that in some cases all the cells appeared bad to him. Nothing strange about that. Unqueening by wholesale, some of the colonies would not be fit to rear good queens. The same colony that couldn't rear a queen worth saving in that way would not have reared a good queen from cells properly prepared by Doolittle himself.



TRANSPARENCY VIEW OF RASPBERRY HONEY. SEE EDITORIALS.

In passing I may refer to the identification of cells. I don't believe the man lives who can tell by looking at a single cell whether it was intended for swarming or supersedure. Mr. Aiken does not dispute this, but thinks he can decide from the lot. Very likely. He thinks pretty confidently he can tell whether

a cell was built because the queen was suddenly removed or was built for swarming or supersedure. Friend Aikin, you can tell every time for sure. When you see a queen-cell right in the middle of a sheet of brood, you may know it's not for swarming or supersedure. If you can't tell in any other way, you can tear down the cells and see whether they are what the Germans call preconstructed or postconstructed. A cell for swarming is always preconstructed; that is, it is started from the very beginning, with the shape of a queen-cell. A postconstructed cell is one which is first started six-sided as a worker-cell, and that six-sided bottom part is always left, and you may know from that that there's no swarming or supersedure in the case.

I have read over carefully what I wrote on page 724, and I see nothing to change unless it be near the last, where I say, "In the hands of the common honey-producer, the best queens will be reared by allowing the bees their own way, and then, when the cells have been sealed in a strong colony, letting the nucleus or colony in which the queen is to be kept till laying have several cells from which to select." By that "best" I don't mean that such queens will be better than those reared by other queen-rearers' plans, for I had just said such were as good as the best; I simply put them in the "best" class, and meant none would be better. I ought also to have emphasized the words "letting the nucleus . . . have several cells." The point is, that in the lot will be cells of the best kind, and also inferior ones, and by giving "several cells" you'll be pretty sure to give one of the best. Of course, in giving several cells you might select all poor ones. To make the matter entirely sure, all the cells would need to be used together.

It would have been better if I had before made some of the explanations I have here given. I am sorry I didn't. But as there was nothing about them but had been familiar for years, the necessity for mentioning them did not occur to me. Perhaps also I kept my gaze a little too closely fixed on the matter as it first started with Mr. Taylor challenging the answer I made in *American Bee Journal*, page 295. The question was, "Suppose at the height of the season you took away all brood except one frame with the queen, inserting in its place empty combs. Then, 48 hours after, take away the remaining frame of brood, queen and all. What kind of queens would you get?" I replied, "After scratching my head over that question, I'm rather inclined to reply that you'd get just about the same kind of queens you'd get if you took away the queen in the first place, leaving all the brood and bees. . . . Now, doesn't it look rather reasonable to you that the bees will select what will make the best queens if you leave it entirely to them?" I was talking with that answer in view, and I see no reason now for changing the answer.

I think I have been misunderstood, and I hereby apologize for not trying to express myself more fully and clearly. Let me try to state what I believe. I believe if you take

away a queen and use all the cells the bees in that colony start, you'll have a sorry lot of queens, taken as a whole; whereas by using the Doolittle plan you may have all of the best. But I firmly believe, and believe with all the believing that's in me, that if you take away a queen and leave all the cells for the bees to act their own sweet will, you'll have just as good a queen as would have been reared if the larva that produced that queen had been reared in that same colony in one of Doolittle's cell-cups after the most approved fashion. If enough of those cells are given to a nucleus to contain one or more of the best, you'll get just as good a queen as by the Doolittle plan. The professional queen-rearer can hardly afford to be so lavish of cells. The Honey-producer with hundreds of cells to throw away may.

Marango, Ill., Jan. 26.

[If I understand you, doctor, bees when left to themselves will rear good, bad, and indifferent queens; but as queens from old larvae will hatch *later* than those from young larvae, the latter will be on duty first, and make way with their rivals. All through nature there is a harmony that seems to work toward the "survival of the fittest."]

Say, doctor, if you try to correct wrong notions, or prevent people from reading more into your lines than is actually expressed by them, you will have a hard job indeed. You have my hearty sympathy. For instance, even to this day some of my best friends are making out that I claim that plain sections will be better filled *because* the bee-space is on the fence rather than on the sections, and then proceed to knock such heresy into fire bits. It's easy—so easy—to set up a man of straw as a sample of the other fellow's manufacture, and then *pulverize* the very straws the creature is made of. It is useless to say that I never uttered such a heresy, as I have already disclaimed any such notion a number of times. —Ed.]

ARTIFICIAL INCREASE.

The Subject Thoroughly Discussed.

BY W. W. SOMERFORD.

Artificial increase, or the formation of nuclei, as given on pages 260 and '61, April 1, has brought and is still bringing many questions. Whys and why nots are especially frequent in letters from beginners who do not seem, generally, to understand fully any method of increasing artificially their number of colonies. For the benefit of such readers I will again sketch over the subject of artificial increase, as I am doing some of it now myself. I increased at a place where I am starting an apiary, seven colonies, up to an even fifty, or seven from each hive that I had to begin with. The queens were all removed from the seven parent colonies just eleven days before dividing, and were carried to other apiaries, and used—the best ones, I mean. The old or apparently feeble ones were killed. After re-

maining queenless eleven days I divided the seven colonies into 43 hives, between five and seven o'clock. I began dividing at exactly five o'clock; and at seven, instead of having 7 strong colonies I had exactly 50 divisions, with from two to four combs each, and they well covered with bees, and each hive had in it from two to six cells, almost ready to hatch. By the way, one of the seven colonies from which the queens were removed had hatching queens, and into a number of the divisions I put Dr. Miller's "pulled queens."

The parent colonies thus divided were in two-story ten-frame Dovetailed hives, and had about ten frames of brood each, being, a part of it, in the upper stories, and honey too. Each hive was well filled with it, so the divisions have a chance to do pretty well, even if the honey-flow should cease at once.

In dividing I left no brood in the hive that occupies the parent location. I gave each of them only a bunch of queen-cells, leaving the entrances open on each hive that occupies the parent location, and has in it the emptiest combs and no brood, only queen-cells ready to hatch. The brood is all given to the hives that occupy new locations; for the hives on parent stands will get plenty of bees if only a few empty combs are left them with only queen-cells. The dividing is done late in the evening to avoid the commotion the returning bees are sure to make around each parent stand. The divisions, or new hives, are put where they are to remain, and the entrances stopped with moss or leaves. Green basswood leaves are excellent where no moss is convenient, and are sure to let the bees out by the third day. If the entrances are not thus closed the old bees in each new hive are liable to stampede during the commotion caused by the returning bees around the parent colonies; and in a stampede where the entrance of a new colony is left open to begin with I have seen every bee take wing that could fly, and pull for the old homestead; and I have even seen the bees that were too young and weak to fly crawl out of the hive and into the grass by the hundred, only to perish, and thus destroy even the prospect of a new colony, in only a few minutes after being divided; but by closing the entrance with anything that the bees can gnaw through in from two to four days, the probability or possibility of bees returning to an extent sufficient to injure the strength of a division is entirely removed, thus insuring perfect success in making increase by artificial means, even in an out-apiary where it can not be visited for a week.

Quite a number ask if screening would be better than moss or leaves. Screening with wire cloth will do to perfection where a person is on hand the second or third night to open the entrance of each hive; but if divisions are being made in out-apiaries, then what? As a bee-keeper can not afford to be running extra trips to out-apiaries at sundown, it is much nicer and more convenient to have them liberate themselves. Besides, leaves, grass, and moss cost nothing, and don't have to be put away when used, and answer just as well if not better. The only cases that I

have had where bees failed to gnaw out in time were when a cold wave came just after dividing, and it remained *very cool* for a week or so—so cold that the bees would remain in a cluster, and not get to work to make an opening. But as it is not safe nor advisable to try to make increase too early in the spring, stuffing the entrances is all right.

I will say for Mr. Agie A. Young, of Little Rock, whose questions I now have, through the kindness of the editor, that the old queen has to be caged in order to *get cells* built, so as to have brood and cells in the combs that are used in the divisions.

The old queen can be left in the hive she has always occupied, but must first be put into an ordinary shipping-cage; that is, if you want to save her. If old, kill her at once, as the colony will build from ten to forty cells, if strong enough to make divisions of, and young queens are always preferable to old ones. Some advocate buying queens; but unless you have plenty of money, I say don't do it. If you do buy, be sure to buy of a man of some years' standing, and at least some sort of reputation as a queen-breeder, for I write from experience. I have bought queens by the dozen from Italy, as well as from various home breeders of but little experience; some of the queens were all right, but the races of bees—oh, my! I have had two of Bingham's smokers that did not even faze them—could not be subdued. As soon as the smoke cleared so that they could see me I'd have to run; and the idea of a professional bee-man running from his bees! Blacks beat running from mongrel races.

Navasota, Texas.

BEES AND FRUIT.

The Importance of Some Bees in the Vicinity of Anybody who Grows Fruit, Especially Cherries: some Strong Testimony.

BY F. L. MORRILL.

Mr. Root.—Of course I want my subscription to GLEANINGS renewed, as I could not well get along without it. It has been of more help to me than I can tell you of since I have been reading it.

Although Suisun Valley is a very good place to raise bees, what honey my bees have made is of a dark color, and does not command the highest market price in San Francisco. Four years ago, when I rented one of the orchards which I am now running, the owners had about a dozen swarms of bees in box hives, and took no care of them at all except to hive the swarms in more box hives. He managed to keep about the same number of colonies, as the bee-moth, which is very bad here, cleaned out about as many colonies as he managed to hive every year. He had a large cherry orchard, and told me that for eight years he did not get a cherry. He was about to dig the trees up when some one advised him to try bees, which he did. The result was that, three or four years after he got the bees, he sold his cherry crop in Chicago and New York

for about \$4000 ; so you see his idea in keeping bees was only to fertilize the fruit-bloom. At that time it seemed to me that, if there was a bee anywhere in the orchard, it would sting me; but since I have studied their ways, and handled them some, I find they are not such little rascals as I once thought them to be. The owner of these bees told me I might have them if I would take care of them and keep them on the ranch. I informed him that I had no use for any kind of insect that had such a sharp way of doing business. One day, however, I was watching a neighbor working with some bees (it is needless to say I was inside of a building, and was watching every bee that came toward the building), and I became interested and borrowed his A B C of Bee Culture; became more interested, made some hives, and transferred the bees, and now have sixty colonies in eight-frame Langstroth hives of my own make. I shall increase to 100 stocks, as I have 140 acres of trees for them to work on. Although this is one of the most fertile valleys in the world, the drouth last year was very hard on fruit-trees. The fruit did not mature last year, neither did the buds for this year's crop; so for two years now the orchardists have not made their expenses. A large percentage of the white varieties of cherry-trees have died, owing to last year's drouth. In digging wells to irrigate we have found the soil in some localities as dry as powder to a depth of fifteen feet.

By the way, we have a gas-engine out here that generates gas and runs on crude petroleum that costs only five cents per gallon, and a gallon will go as far as a gallon of gasoline in other makes of engines. I speak of this because I have seen none advertised in Eastern papers.

I have found that honey gathered from fruit-bloom is bitter to the taste. There is a wild peavine that grows here that the bees gather honey from all summer and fall, and the honey, when first gathered, is as blue as a navy shirt.

Suisun, Cal., April 24.

COMB AND EXTRACTED HONEY.

Producing Both at the Same Time on the Same Hive; the Shallow Extracting-super for Starting Bees into the Sections.

BY LOUIS SCHOLL.

The article in April 15th GLEANINGS, by Mrs. Barber, in regard to producing comb and extracted honey, was read with great interest; and as Mrs. B. asks others to try *her* plan, and report, I will endeavor to tell how I conceived the idea of using shallow half-depth extracting supers on all colonies intended to be run for comb (section) honey.

All of my hives that I have been using were the 1½-story eight-frame Dovetailed, with shallow extracting-supers. These are left on the hive during the winter—in fact, all the year round except on those colonies which are well started in their section-supers during the honey-flow, as the shallow-frame supers are generally moved to other colonies run for ex-

tracted honey exclusively. These are mostly colonies which are too slow for comb honey, and often these are the weaker colonies in the yard.

Well, to return. In 1895 we had a sudden flow from mesquite; and as I had only one super and a set of frames to each colony they were soon filled with honey before any was ripe enough to be extracted. As the bees needed more room I could do nothing else than to get all of my sections ready, and nail up some supers, using old fence boards and what all. These were put *between* the shallow super and the brood-nest; and how the bees did fill those sections!

I did not care to produce a very great amount of section honey, so I selected several of my best and strongest colonies to produce the amount wanted; but after putting the section-supers on they were very slow to enter them.

One or two did not go up at all, and not one of these colonies entered the supers until the brood-nest was completely filled with honey. As bees are loath to store honey above sealed stores, they would loaf and hang all over the front of the hive, while the other colonies produced a far greater amount of both comb and extracted honey. So it will be plainly seen that this idea was a good one, and it has been practiced ever since that time.

I have been busy this week in placing the comb-honey supers *between* the shallow-frame supers (which are about half full) and the brood-nest. The mesquite flow is now on; and if the weather continues favorable, those supers will soon be full.

To conclude, I will give here a copy of my report for 1897 in the *Southland Queen*, January, 1898:

"I have the eight-frame Dovetailed hives, and use shallow extracting-supers. As I run my bees for extracted and comb honey I first let them get started in the shallow super, and then I put a super filled with sections in between."

"If you run some colonies for comb honey, and treat them in this way, the bees seem to try to see how quickly they can fill the sections between the super and brood-nest."

After considering all these most important points on the production of section honey, as bees too slow to enter section-supers, too much honey in the brood-chamber, and that bees are quite loath not to store surplus honey above the sealed honey in the brood-frames, and a great many other points worthy of the fullest consideration, I have now on trial in my apiary a sectional hive consisting of a series of cases, brood-cases, and section-cases all interchangeable, by the use of which I believe we can overcome a great many of these difficulties. After putting this hive to a thorough trial we will gladly say more about it in some future articles.

Hunter, Tex., April, 1899.

[Once get the bees started, and they will go right on with the work. The principle of using an extracting-super to get the bees into the notion of going above to work is all right. It worked nicely for us last summer.—ED.]

RAMBLE 168.

In Tacoma.

BY RAMBLER.

The Phenecie Bros. are not unknown to bee-keeping fame in Washington. They have a little factory here in Tacoma for the manufacture of supplies, and also have an apiary. I believe they published a few numbers of a bee-journal; but it seems that no portion of the Pacific Coast, either north or south, has a class of bee-keepers that will sustain a journal devoted to their interests, therefore this journal was suspended, and is in that painful condition to this day.

Upon the first call that Mr. Littooy and I made at the factory we found no one within. It was election day, and the proprietors were serving their country at the polls. I called twice afterward, and at all times the same silence reigned, and I did not see the gentlemen while in Tacoma.

Mr. W. H. Pallies is another bee-keeper of whom I had some knowledge through correspondence and trade, and I felt quite well acquainted with him even before I met him. Mr. Pallies lives quite a little distance out of the city, in a suburb quarter. It was extremely easy to find his residence under the guidance of Mr. Littooy. Of course it rained somewhat that forenoon, and we dispensed with the wheels, and took the electric-car line which runs past the gentleman's door. Our call was made the day after the election; and although we found Mr. Pallies at home in the tender care of his family, he was considerably used up from the arduous duties of election day. I understood him to say that he was obliged to sit on a board all day and nearly all night. Of course, such treatment would use almost anybody up.

Mr. Pallies has about 100 colonies of bees. He is one of the pioneer bee-keepers of this portion of Washington. He also uses the Heddon hive; but through the discussions of the virtues of large hives in the bee-journals he is getting somewhat estranged from it—so much so, at least, that he is experimenting with a few of the regular Dadant twelve-frame hives. His experiments so far give him a favorable opinion of the large hive. He says that a swarm from an ordinary eight-frame hive is not large enough to fill one of these big hives, and it takes them about a year to get thoroughly to going; but when they do get to going, when one of these big hives casts a swarm it is so large it will fill a hive of like size and fill it rapidly with honey. In this case like begets like. He is quite sure that a colony in one of these big hives is not so liable to spring-dwindle as they are in a smaller hive.

Mr. Littooy and I could not be convinced that any hive is better than the Heddon; and we were firm in our belief that any thing anybody else can do with a hive we can do with the Heddon, and more too.

Mr. Pallies seems to be a careful experimenter, and I have no doubt he will learn the best way to operate his bees, and in an emi-

nently satisfactory way to Mr. Pallies. He sells all of his honey in his home market, and to private customers, and sometimes has to send out of the State for honey. The grocers here as well as in other coast towns have a prejudice against California honey, for such mixtures have been sent here from San Francisco that, when sold to the consumer, they would bring them back to the grocer.

Mr. Pallies related his investigations into a San Francisco firm which advertised and sold outfits for the manufacture of artificial honey. The main ingredient for this mixture was a syrup made from boiled artichokes. The syrup is white and tasteless. Cornstalks were then ground in a sorghum-mill, and the resulting syrup along with glucose, was introduced to give color and sweetness. To five gallons of the above mixture one quart of



W. H. PALLIES' APIARY AND HONEY-HOUSE.

honey was added to give a honey flavor. The entire cost of the outfit was \$200. A very plausible circular extolled the mixture as in every way equal if not superior to bees' honey, and the profits from its sale were stated to be enormous. The company made their profits from the sale of the outfit, and cared but little whether the mixture was of use or not. Although such mixtures were put upon the market several years ago, the effect still lingers.

We hear much about the honey markets of Europe, and that the consumer prefers his extracted honey in the candied state, for he has been educated in the right way, and knows how to choose the pure honey. On the contrary, our consumer has been educated by the schemer; and when pure honey is offered for sale there is a suspicion that there is a Yankee trick behind it; and is it not a fact that such schemes are worked upon the people of this more than of any other country? and when they are tried in other countries they come to grief through more stringent national laws. The very low price for honey within the past few years is the only effective

remedy in this country. The profits now will hardly warrant extensive adulteration.

I present a small photo of Mr. Pallies' apiary and shop. The latter is a combination affair where bee-fixtures are kept, poultry housed, and Belgian hares bred for market. Mr. Pallies seems to take considerable pride in this species of stock, and he has some fine and valuable specimens on hand.

"If you had only given us information that you were coming," said he, "we would have had Belgian hares for dinner." That is what we often lose by dropping in upon a family unawares; but we had a dinner fit for a king, for all that. Mrs. Pallies and her daughter are evidently experts in that line. Besides the bees, poultry, and Belgian hares, Mr. Pallies has a small fruit-ranch devoted to the raising of small fruits. The soil here seems to be very productive; and, having the necessary humidity, every thing in the vegetable and fruit line makes a rapid growth. Real estate is another factor in the hands of Mr. P., and I have no doubt that he could locate any person desiring to settle in this wonderful country.

The bee men around the city of Tacoma, in the first flush of their enthusiasm, a few years ago, organized a bee-keepers' association. Two meetings were held, and the various questions were so thoroughly discussed and settled that they have had no need of an association since, and it is in the same condition as the Pacific-coast bee-journals — suspended.

Mr. Pallies is greatly interested in the pure-food movement, and to the women of Tacoma is to be accredited the organization of the first and only State society in the United States having for its object the encouragement of patronage of home industry. The organization pledges its members to patronize home products whenever possible. A trade-mark is applied to the label of home products found worthy of support, to distinguish them from the undeserving. Several branch societies are organized throughout the State. Testing committees report on the merits of the product. For instance, honey that bears the trade-mark of the society can be accepted as absolutely pure. If every State would give more attention to these matters, which are vital to health and comfort, there would be fewer doctor-bills to pay.

My two days' stop in Tacoma seemed very pleasant when basking in the smiles and conversation of the bee-keepers in their homes; but when outdoors there was a certain sadness in the air; for if the clouds were not weeping they were all ready to. I could hardly understand how the people generally could keep so cheerful. I suppose it is all in getting used to such a condition of the weather.

The next morning I turned my face to the north again, and toward the city of Seattle. For conveyance I went aboard the little steamer Sentinel, and had a delightful run of 26 miles up the sound. It was cool and cloudy, and a mackintosh was necessary for comfort. My wheel rested comfortably in one of the row-boats on the upper deck; and on

the lee and warm side of the large smoke-funnel two Indians crouched for comfort.

In the little cabin below, there were about 20 people of both sexes and of various nationalities, and with us an Indian family. I was informed that this Indian owned a large ranch in Eastern Washington; and from the smart and well-dressed appearance of himself, wife, son, and daughter, he was evidently prospering. The daughter, of about 25 summers, attracted my attention, for she was elegantly attired in a rich magenta-colored silk dress, and wore as nicely bef feathered a hat, and as jauntily, as any white girl, and she was reading the daily paper.

The Indian reservation is probably the chief factor in civilizing this Indian, or certainly his daughter, for the Indian children are all gathered into the reservations for training and education. The one I visited near Tacoma was populated with more children than adults, and the result is civilized Indians. One of our leading generals once said that "the only good Indian is a dead one." That would be a heartless remark applied to the family on this boat, for here a good Indian is a civilized Indian, a tiller of the soil, a producer, a peaceable man, and working in harmony with his white brother. I should also dislike to hear the word "squaw" applied to a civilized Indian maiden, like this one for instance. They have outgrown that low-down name, and certainly deserve to be treated with polite consideration.

I have not had much experience with the Indians; but in my various glimpses of them and their occupations, all the way from the Mexican line to this northern country, I have never found an Indian managing bees according to civilized methods. The Indians, especially in the southern country, bring in quite an amount of wax; but the method they practice is close to nature's way. They rob the many bee-caves and trees, feast on the honey, and sell the wax.

While I was reflecting upon this matter with this Indian family before me, I had an idea that there was a good opening for some good missionary work with the Indians in the direction of bee-keeping. In fact, I had just made up my mind to take up the work myself, and commence upon this Indian family; but my resolution was suddenly shaken by the boat running up to the wharf at Seattle, and all was confusion. Our little group of passengers went their various ways, and I no more saw the lovely Indian maiden.

ANOTHER RAMBLER.

In the Land of the Canebroke and the Cotton-fields.

BY CARRIE BELLE ROOT.

[While Miss Carrie was at school in Oberlin she became acquainted with a young lady whose home is in Moorehead, Miss.; and said young lady took her down to her southern home during vacation time. Of course, Miss Carrie has been obliged to turn over the subscription-list, temporarily, to other hands, and

she has, by invitation, given us an account of her rambles.—A. I. R.]

Away down south, not far from the Mississippi River, there is a small village divided by a pretty little bayou into two parts. On one side of this bayou is the darky settlement. The church is the first thing which greets our eyes, and around this, in picturesque confusion, the little whitewashed cabins of the colored people are clustered. A few steps further on is the Almeda Gardner A. M. A. school for colored girls. On the opposite side of this bayou is the one store and postoffice, the new hotel, and three or four houses belonging to the white people. It would be useless to bring a bicycle with the intention of riding, nor even a carriage, to the town, for the roads are not as yet in condition to admit of that mode of traveling. Every one, young and old, rides horseback, and it is great fun for a party, mounted on steeds of all conditions and sorts, to start off in the cool of the day for a horseback ride. Riding down south is much different from the riding up north, and far more pleasant.

One afternoon, about five o'clock, a small party of us started, the girls dressed in the manner of the country, hair braided down the back, and hats off, for we did not care to sow a crop of hats and hairpins in the Moorhead bayous and forests. We rode north beside the railroad track until we came to the long pile bridge. Here we crossed the aforesaid bayou, and found ourselves in the woods. Soon our clear sailing apparently ended, for we came to a growth of cane growing much higher than our heads; but the horses, nothing daunted, turned into it and we found a narrow path just wide enough for us to ride through, single file. Within it was cool and shady, for the cane grew so thick that no glimmer of sunlight came through. The head horse started on a gallop, following the winding path in and out, and, of course, all the other horses caught the inspiration. Even my little pony, Dexter, at the end of the procession, was unwilling to be left behind; for as soon as he saw the tail of the last horse vanishing among the canebrake he pricked up his little ears, and off he started after the rest. Often, branches from the larger trees would hang over our path, and it became very exciting to see who would get through with least number of eyes scratched out.

All good things come to an end, so did our path through the cane; for we came out of it into the open woods; and, finding the trail muddy and wet from recent rains, we turned our horses aside and let them make paths for themselves through the thick underbrush and tall trees. Again we had to be careful, for I found that, while I was admiring the beauty of the scenery on the right side, the pony would walk too close to a tree on the left, and, as a natural result, the tree and I would find ourselves in too close contact for (my) personal comfort. Once, as Dexter was bravely pushing his way through, a small sapling flew back and knocked one of my feet out of the stirrup, and gave the other a sharp rap which did not feel very comfortable for a minute. Fallen

trees often lay across our path, but it did not seem to occur to the horses to go around them. They would calmly pick up their feet and step over; or if the log looked a little large, Dexter, without stopping to give warning, would jump it.

On the day in question our party went as far as we could without encountering too great obstacles, then turned our horses' heads toward home again. We all looked forward to our return ride through the cane, and it was even more fun than the first time. The country seemed so wild and unbroken that it was a pleasure to ride through it, for new scenes and new obstacles were constantly appearing before us. Rattlesnakes are said to be quite common in these parts, but we have not encountered any as yet.

We arrived home about half-past six, bringing with us as a trophy of our ride nothing but violets and a big appetite apiece.



ARE WE GOING AGAINST NATURE IN WORKING FOR COMB HONEY?

Question.—Is it not against the very nature of the bees to have so many traps by the way of separators, T tins, queen-excluders, etc., in the production of comb honey? and do not these things lessen our yield materially, and place the bees to a great disadvantage above what they were with the large open 15-pound boxes our fathers used to have their honey stored in?

Answer.—When I first began bee-keeping comb honey was not put up as at the present day, as a part of the boxes used were made to hold 15 pounds, as our questioner hints at, while the smallest boxes then in use in this locality held fully six pounds. Some of these had glass sides while others had only a small piece of glass over an auger-hole, so that the owner of the bees could see through this glass to tell when the combs were completed, or when the honey was ready to take off; for, when these combs were sealed next the glass, the whole of those in the box were quite apt to be so, as a general rule. In these boxes we frequently found both brood and pollen, especially when any box was filled from white clover, even with a hive as large as 2000 cubic inches, and many wondered why the queen would go above to lay, when there was apparently plenty of room for her below. The reason for this, as I look at it, is that new comb is being built above, which is generally of the drone size of cells, where the bees have their own way in building it, as was the case then, which, with the desire of the queen to be where the bees are the most active, causes her to go into the surplus arrangement to lay. Some seem to think that this trouble with brood and pollen in the surplus arrangement of the hive is something that comes by our

working against nature in these latter days, caused by the contraction of the brood-chamber being done by many of our leading apiarists during the past score of years; but I believe this to be a wrong idea, for I found much more brood and pollen in my comb honey 25 or 30 years ago, before I ever contracted any hive, than I have since, where no queen-excluding honey-board was used.

As time passed on, the thought originated in some enterprising bee-keepers' head that honey would sell better if stored in still smaller boxes than those weighing 6 pounds, so we soon had the 4-pound and next the 3-pound box. This box was used in the same way as its predecessors had been; namely, with glass sides, while it was made long enough to hold only one comb, which comb was about $2\frac{1}{4}$ inches thick when completed. With this box I had very little success, for the bees seemed very loath to work in it; and when they did so, they would frequently try to put in three combs, which put it in very poor shape for market. For this reason I decided that it was not in accord with "nature" for the bees to be cut up into so little clusters, and have their comb as thick as $2\frac{1}{4}$ inches. Consequently I went back to the six pound box again, leaving it to others to work the smaller ones as they pleased.

When the two-pound sections with separators were introduced I considered them as being still worse than any preceding them, for the bees were divided into still smaller clusters than before, or at least that was the way I reasoned. One night, while lying awake thinking on the subject, I believed that I saw the difference between this way of using small boxes and the old way, where glass was used on both sides of the box; for in using separators the bees were not, properly speaking, divided into little clusters at all, but virtually had one box of the size given by the number of sections used in one tier, which was generally nearly twice the amount of one six-pound box; for as the tin separators did not come within $\frac{3}{8}$ inch of either the bottom or the top of the section, the bees and warmed air could pass from one to the other just the same as if no tin were there, to all intents and purposes. But there was so small an entrance that I feared this would be a hindrance to the bees coming up in the sections to work to advantage; and in order to overcome this I left the bottom off all the sections first used, so that I might not meet with a partial failure, as I had done with the three-pound box. My yield of honey from colonies so fixed was greater than fall than from the hives worked in the old way, as an average; but I found that, in leaving the bottoms off the sections, I had gotten into a job which I did not care to go through with again; and, besides, in using the tin separators so narrow that $\frac{3}{8}$ inch was left both above and below them, I had a bad job here also, for the bees bulged the combs so badly at both bottom and top they could not well be crated.

Although still fearful that I might lessen the yield of honey by putting on the bottoms of the sections and widening the tin to the

separators, yet I resolved to try; so the next season found me putting sections on a few hives, very nearly the same as I use them now, all the difference being that I then used a two-pound section, while I use the one-pound now. The rest of the apiary was worked with the six-pound boxes as before. At the end of that season I found that the colonies having the sections with separators gave me the largest yield again, and the combs in these sections were simply perfect, or as nearly so as any we have seen pictured within the past year, while many of those in the larger boxes were far from being so. The entrance to the sections also seemed ample, and by a little figuring I soon saw that the fourth-inch space between each section was greater as a whole than the entrance given to the six-pound box. When the next season came, I worked about half of my bees with sections and separators, and the other half with the six-pound boxes, thus using caution when starting out on something outside of the beaten path which I had trodden in the past, as I always think it advisable to do.

The result of that season proved the same as that of the seasons before, so that I then adopted sections entirely, and firmly believe that such an arrangement does not inconvenience the bees in the least, over what they would be in a box of the same capacity without separators, or with separators with any kind of perforation in them. When the queen-excluding honey-boards came before the public I tried them slowly, as I did the sections with separators, using more and more each year, till, so far as I am enabled to detect, I can say that none of these things cause any inconvenience to the bees, or in the least decrease our crop of comb honey. Only in this way of proving things can any one fully say what is good and what is not. The old injunction, "Prove all things, hold fast to that which is good," is as valuable to-day as it ever was.



BEE-PARALYSIS.

Dr. C. C. Miller:—I have some disease among my bees that seems to be very bad. Will you please to give advice through GLEANINGS as to what it is? They crawl or are dragged out of the hive by the well bees, and have a shiny appearance, as if dropped in grease; a quivering motion: live a few hours, become swollen, and die. Is the disease contagious? I have united it twice, and the well hives became diseased. Would you recommend burning the hive, bees, and combs? I have changed queens three times

Dadeville, Mo., May 8. R. D. McMURRY.

[Dr. Miller replies:]

If you will look up back numbers of GLEANINGS, and read what has been said about the

nameless disease, or bee-paralysis, you will find about all that is known on the subject. To be sure, that isn't all that might be desired; for although a number of cures have been recommended as sure by different persons, there seem as yet to be no means of treatment that have proved efficient in the hands of the many.

As to contagiousness, it certainly is not very contagious, for I've had one or a few colonies to be affected throughout the whole season without having others affected. As far north as Northern Illinois it is hardly worth paying any attention to; but in the far South it is a very serious matter. It is hardly advisable for you to destroy the affected colonies. Quite possibly the disease will disappear of itself, as it has with me.

C. C. MILLER.

Marengo, Ill.

[But the disease, judging from reports, is very contagious in the South, is it not, doctor?—ED.]

BEE-KEEPERS IN THE LEGISLATURE.

I have just read with interest the experience of the New York bee-keepers with their legislature, relative to the spraying-bill. I had the same experience in our legislature. Our bill was introduced by the horticulturist. I said but little until the bill came up for its third reading, then I introduced an amendment making the penalty the same for spraying while in bloom as the bill provided for not spraying at all. The amendment was adopted, and the bill passed the house as amended. I then followed it to the senate, where my amendment was concurred in, and it is now a law upon our statute-books.

We have not been so fortunate this winter with our foul-brood bill. It was referred to the committee on ways and means, who refused to report it out, so the bill is dead in the committee room. I think we need one or two good live bee-keepers in every legislature. I shall see that this foul-brood bill is introduced at every session of our legislature until it passes. I think the bee-keepers of the State are more to blame than any one else for this failure. I doubt whether a dozen have written to Lansing in the interest of the bill.

GEORGE E. HILTON.

Fremont, Mich., May 19.

THOSE DARK RAYS.

What an age we live in! When are the wonders which startle the world to cease? Now comes the discoverer of "dark rays" (see page 355, GLEANINGS) such as enable the owl, cat, and other nocturnal prowlers, to see their prey. The prismatic rays and the X rays, in the realm of discovery, are in a total eclipse. It has been generally supposed that darkness indicated the absence of rays, and that the pupil of the eye expanded as the rays of light lessened, so as to take in, or gather together what there were, so that objects might be made visible, but we are told that the expansion of the pupil of the eye is

for quite another purpose; viz., to take in a greater quantity of darkness, thus rendering objects discernible. Oh, my! Just shut your eyes, and think a moment. How much darkness tabby cat could get, even in the daytime, by shutting her eyes! Then where would poor mouse be? What's the use of expanding the pupil, even in the dark? Shut the eye; it'll be dark enough. Why, bees ought to do their best honey-gathering during the darkest nights. We sometimes hear it said that they have been known to gather honey, in some localities, during very bright moonlight nights; but mine have not made sufficient advancement in the use of "the rays of dark" to do even that; and for several reasons, which I might give, I hope they never will.

W. M. WHITNEY.

Hospital, Ill.

A PLEA FOR THE KING BIRD.

I do not own a honey-bee and never did; but I like your paper, and I love God's creatures, hence this article. On page 354 A. J. Wright makes a common but most unjustifiable attack on the king bird as an enemy and destroyer of honey-bees. On page 233 of the Report of the Secretary of Agriculture for the year 1893 is given the food habits of the king bird. The specialists of the department analyzed the contents of 171 stomachs taken from king birds in nineteen different States, Canada, and the District of Columbia, six months being covered in collecting the same. Only 14 stomachs contained any traces of the honey-bee, and there was a total of only *fifty* bees found. Of these, 40 were drones, 4 were workers, and 6 were too fragmentary to identify. Thus only one bird in 12 caught bees, of which only 10 per cent were workers. In several instances birds were shot near beehives, but no trace of bees were found in their stomachs. Before condemning any of God's creatures, be sure we are right, then go ahead.

W. H. SEELY.

Howell, Mich., May 6.

[But I have seen king birds catch bees in our apiary at the rate of about one a minute. They caught the bees in the air, then would alight on the barn near by and then swallow them. One bird would catch perhaps a dozen in this way at a time.

At one other time we lost a good many queens during the queen-rearing season, and there were king birds that made a regular business of being on hand in the morning. I did not see them catch bees this time; but I shot several of the birds, and after that the young queens did not "come up missing" so often. King birds, like man-eating tigers, acquire a liking for a certain kind of dietary; and if the birds are making frequent visits to the apiary you may be sure they are there for the bees. As they are caught on the wing, naturally the largest and the slowest of flight bees (the queens) would be the victims. The report you refer to only goes to show that the birds in question were not of the bee-eating kind.—ED.]



OUR apiarist, Mr. Wardell, is now raising queens successfully *a la* Doolittle, in the brood-nest, with a laying queen attending to her duties in the hive. Cell-raising has been going on right along during this spell of cool weather we have been having for the last eight or ten days, apparently, without let or hindrance.

BEFORE the next issue is out the honey season in most localities will have begun. The locusts are just going out, and white clover is just beginning to show its beautiful heads here and there. This would have been an ideal spring except for the fact that it has generally been cool for the last ten days—that is, from the 17th to the 27th. While winter losses have been heavy, most bee-keepers are hopeful because the conditions have been fairly favorable.

STRANGELY enough, the queen-breeders of the South have this spring had almost no advantage over those of the North. During March and the fore part of April the weather was about as unfavorable for queen-rearing in the southern portions of our country as in the northern; and when the weather did open up warm and balmy, the queen-breeders in the North could begin just as soon. These thoughts came to me when we tried to get queens from the South this spring. The almost universal complaint seemed to be that the weather had been too unfavorable in the South.

T. F. BINGHAM, of Farwell, Mich., the smoker man, lost 80 colonies of bees on the 11th by a spark from the railroad, which, presumably, was close at hand. A hive of bees with its dry lumber, with its combs that burn almost like tar, makes good material for a fire; and if the grass caught fire near one hive it might be the means of spreading it to every other colony in the apiary. When I visited W. L. Coggs shall we stopped at one yard where two colonies were literally burned clean, leaving nothing but the tin roofs, the nails, and the ashes, and it was a wonder it did not take the whole apiary. This fire caught from a smoker.

THE HONEY OF APIS DORSATA.

ATTENTION is called to the fact in the article elsewhere on *Apis dorsata*, that the honey that is stored in combs built by these bees in open air is apt to sour. It is well known that, in an ordinary hive, bees get up an artificial current that carries on the process of evaporation very rapidly. But such artificial currents can scarcely be secured in case of a unicombe hanging in the open air on the limb of a tree. While India has a very hot climate, W. P., at my elbow, says it is very moist for the greater part of the year at least. This, no doubt, would account in part for the thinness of the honey and for its tendency to ferment.

SECTION-CLEANING MACHINES.

WE have here one of the latest Aspinwall section-cleaners. It is a foot-power machine having a mandrel at the top, and in convenient reach of the operator. On the end of this mandrel is secured a metal cylinder about 2 inches in diameter and 8 inches long. At equal intervals are slots cut lengthwise of this cylinder, and in these slots are fitted scraping-knives that project out about like the bit of a plane through the face of the block.

Unlike the ordinary sandpaper machine this does not clog with propolis. It does the work rapidly, but does not, to my notion, do as nice a job as an ordinary scraping-knife or sandpaper; but as it works so successfully with Mr. Aspinwall, I am free to acknowledge that I have not yet learned the knack of scraping with a machine of this kind. C. Davenport, in an article in the *Amer. Bee Journal*, tells of a series of interesting experiments with machine section-cleaners. Sandpaper, composition sand-wheels, emery wheels, and the like, he finds, fill up with propolis. He then adopted a "wooden roller about 2 inches in diameter," with "steel knives in these about $\frac{1}{8}$ inch apart," projecting "about $\frac{1}{4}$ inch above the wood," the knives being let into sawkerfs. This cleaner, he said, "will remove propolis from sections very rapidly. It never clogs up, even if the glue is so soft that it is difficult to clean the sections by hand; though when the edges of the sections are held against it, care has to be taken or the knives will catch on the corners, and instantly tear the whole section to pieces."

I have just received word from Mr. J. A. Golden, of Reimersville, O., whose machine section-cleaner we illustrated on page 215 of this journal for last year. This makes use of a sand-belt; and, unlike the ordinary sandpaper, he says it does not clog up with propolis, but does the work rapidly and nicely. Mr. Golden writes that he now has the machine so perfected that any child can run it. The belt he uses is made of sand-cloth, about 4 inches wide, and runs on two pulleys that are geared up to give a good speed. The operation of clearing is to lay the section on the belt, and the yielding surface, he says, does not mar or damage the edges of the section. I have asked him to send us the perfected machine for us to try, after which I will report in regard to it.

There is no question but the machine section-cleaner is bound to come, and those of our readers who are of a mechanical turn of mind, and have good tools, would do well to give this matter some attention. To save useless experiments I will say I believe the solid-disk sand-wheel is not a success, owing to the fact that it fills up with propolis; and why the sanded belt of Mr. Golden does not meet with the same difficulty I can not understand.

Both Mr. Aspinwall and Mr. Davenport have the right idea, but so far as I have experimented the knives do not make smooth work. The Aspinwall might be improved by putting in more knives—that is, make them only $\frac{1}{8}$ inch apart, as recommended by Mr. Davenport. Such a mandrel could be very easily made.

APIS DORSATA HIVED BY A GLEANINGS CORRESPONDENT.

It is with no little pleasure that we publish elsewhere the result of the efforts on the part of a missionary who has succeeded, at least partially, in hiving and domesticating a colony of *Apis dorsata*. Now that Mr Rambo, our missionary correspondent, has formed the acquaintance of these bees, has found them gentle, and comparatively easy to handle, I feel certain that he will be able to demonstrate whether or not they can be confined in hives. If so, we will have a shipment of these bees *en route* to America in short order. In the mean time our soldier friends are probably "pulling the ropes" in the Philippines. If they meet with any degree of success we are bound to get the giant bees into the United States at a comparatively slight expense, or at an expense that will come within the reach of private enterprise.

FIRE AT THE HOME OF THE HONEY-BEES.

On the 18th of May we came very near losing our warehouse, its contents, and possibly our lumber, aggregating in value some \$30,000 or \$40,000, by a fire that originated from some electric wires. Of course, the lumber and building were insured, but the insurance would not begin to make up for delays to customers, and general disappointment all around. The fire started in an electric starting-box that is used to start a small electric motor that runs the elevator. This elevator is situated in the middle of the building; and the starting-box, which was on the floor, was right in the elevator-shaft. A boy happened to be passing by, and gave the alarm just in time; for a fire in the elevator-opening would, in all probability, soon have enveloped the whole building. Our night watchman and two or three of our packers who were working late that night put out the fire alone, while the rest of us were getting our big fire-pump, fire-hose, and every thing else in good working trim. As it was, the loss amounts to only \$45.00, which was promptly paid by the insurance companies.

This building is the only one in the lot that is not equipped with automatic sprinklers, and in consequence the fire *might* have been serious if it had not been extinguished when it was.

DIAGNOSING FOUL BROOD WITH A PICTURE; SEE PAGE 425.

In this issue I take pleasure in presenting a characteristic and accurate representation of a foul-brood comb. This specimen was photographed by Thos. Wm. Cowan, and I obtained the loan of the picture long enough from W. Z. Hutchinson to take off a half-tone.

It is impossible to describe, by ordinary language, foul brood so that it will not be confused with dead brood, and other forms of unsealed or partly sealed brood that are perfectly normal and healthy. For instance, the bees have a way of leaving some of their brood in hot weather unsealed for a short time. The hole will be drawn up to a small opening, and a beginner, or one not familiar with the disease, might imagine that these pinholes rep-

resented "something awful." But the pinholes in *real* foul brood are irregular and jagged, as shown in the illustration on page 425. The larva is shrunken, and of a dark coffee color; and the cappings of the dead brood are somewhat sunken, and have a sort of greasy look. If any one has in his apiary specimens of brood like the one shown in this illustration, accompanied with the other characteristics named, he can set it down as a fact, probably, that he has genuine foul brood.

If I had combs as badly diseased as the one shown in the illustration I would burn them at night if possible, and then bury the ashes below the reach of a plow or spade. In the light of our present knowledge of the difficulty of killing the spores of this enemy at a boiling temperature, I would never think of extracting foul-broody honey. I would count it as profit and loss, and consign it all to the bonfire, combs and all.

Since our last issue there has been some inquiry as to where to get naphthol beta and how to dilute the same so that it can be used in the syrup fed to the bees. The article can be obtained at most of the drugstores, at least; but if not, your druggist can get it for you. As to the matter of dilution, the following are directions recommended:

For every pound of sugar used in making syrup or candy, dissolve three grains of naphthol beta in alcohol. Naphthol dissolves freely in alcohol, but it is insoluble in cold water. Pour the solution into the syrup, when sufficiently boiled and still hot.

There has been considerable call of late for the treatment recommended by Wm. McEvoy, foul-brood inspector for Canada. We have had for some little time a foul-brood pamphlet giving his method of treatment, which has proven to be so efficacious on the other side of the border line. This pamphlet will be sent to all subscribers asking for it who inclose two cents postage.

THE ADULTERATED-FOOD INVESTIGATION.

It seems that an adulterated-food investigation has been taking place at Chicago during the past month, closing on Friday, May 12. On that day the editor of the *American Bee Journal*, together with Secretary Moore and Vice-president Mrs. Stow, of the Chicago Bee-keepers' Association, appeared before the Senate inquiry committee to testify concerning the adulteration of honey as practiced in Chicago. Editor York testified that the adulteration of honey was "being carried on to an alarming extent;" that it was not the beekeepers who were doing this, but the jobbers almost exclusively. The chief adulterant seemed to be glucose—an article that cost probably a cent a pound, while pure liquid honey was worth seven to eight cents; honey bought in the comb was always reliable, because there is no way for manufacturers to imitate it. The other witnesses corroborated Mr. York, and much good work was done. Mr. York, in his journal, commenting on this, says:

It is the intention of the Senate committee to print all the testimony they may gather as to the adulteration of all kinds of food, and present it to Congress at its next session, and then doubtless an attempt will be made to enact a national adulteration law. We endeavored to impress upon the committee the urgent

need of a statutory law against all forms of adulteration, including honey, of course. We were glad of the opportunity to give the committee all the information we possibly could.

Mr. Moore and the writer gathered up about a dozen samples of honey—both adulterated and pure—which we placed before the committee. Prof. Wiley suggested that we forward them to his laboratory in Washington, where he would analyze them, and then report.

THE USE OF HONEY FOR FINE CAKES, CONFECTIONERY, ETC.

As our bakers are now using considerable quantities of honey in preparing certain fine goods, Ernest recently wrote to one of the leading establishment's for samples of their goods wherein honey takes the place of sugar. Below is their reply:

We are only too glad to comply with your request, and send you a few samples of our goods wherein honey is the important factor in the formula for making; besides, we make many more goods that have honey in them. We are sending you five varieties of cakes, in the formula for which honey is the principal factor; besides, it gives variety in flavor different from any other sweetenings, and it makes goods much lighter and finer in appearance. The names of the goods are as follows: Honey-jumbles, iced honey-cakes, frosted creams, honey-bars, and honey cakes plain. We are on the increase every year in the use of honey in the manufacture of cakes. Mansfield, O., May 8. NATIONAL BISCUIT CO.

The above five kinds of honey-cakes were scattered around to be sampled among the children and grandchildren belonging to the Root Co., and I for one was agreeably surprised to find so much improvement in the last few years in this class of goods. Why, it is enough to make one hungry to look at the case of samples; and after you test them you decide they are fully as good as they look. For picnics, for an outing, or for lunch, I do not know how any thing can be nicer. These honey-cakes have the remarkable property of keeping almost any length of time, without a particle of injury. Some of our friends may remember that we sold barrels of them at the Ohio Centennial; and those that had been kept until they were two years old, to test this matter, were just exactly as good as those only a month old. Of course, they should be stored in some dry place; but when wanted for use, if you want them more moist put them where it is a little damper, or shut them up in a stone jar with a cover on, and they will soon become soft and velvety to the touch. Why, it actually makes me hungry to write about it, and it will not be dinner for several hours yet, either. If bee-keepers would take pains to introduce these goods it would help make an opening for large quantities of honey. I do not know on what terms the National Biscuit Co. send out sample cases like the one submitted to us; but I am sure they will make a favorable arrangement with those who wish to open up trade in these beautiful and toothsome goods. A. I. R.

GRADING BY PICTURES; GRADING BY PATTERNS.

WHEN I visited the home of the late Miles Morton, to whom I have referred as the gentleman who had used fences for so many years, if there was one subject I discussed a good deal with Mr. S. A. Niver, his brother-in-

law, it was that of grading. When I came away I took samples of his "fancy" and also a sample of raspberry comb honey, the raspberry showing only when the honey was held up to bright light. I had these sections photographed.

Referring to the picture on page 393 in our issue for May 15 I said in a footnote that the fancy and the No. 1 were too near alike, and that there ought to be a greater difference. The illustration that I have shown in the first column on page 428, in this issue, represents one of Mr. Niver's fancy, taken from his *regular stock* of fancy. It will be noticed that it is well filled—better filled, indeed, than the fancy shown on page 393; but, as Mr. Niver said on that page, he believes in having the pattern sections a little *under* the grade which each pattern is to represent; or, to adopt his exact language, have "three pattern sections which represent the poorest allowed in each grade." Now, then, if a section is up for consideration that is poorer than No. 1 grade, it should be placed with the No. 2's, even if it is better than No. 2 pattern. If there is a section that is just a little *better* than No. 1, it should be called "No. 1." If it is not quite equal to the poorest, as shown by the No. 1, then it must be called No. 2. The particular section designated as "fancy" on page 428, in this issue, I should say was the best fancy. The one shown in this number and in our last issue would represent the extremes in point of filling allowed in "fancy." The cappings of the one shown in this issue are a little darker than they otherwise would be, except for the fact that the section was nearly a year old when photographed, and consequently had a little the appearance of being water-soaked; but it shows what might be called a well-filled section of the fancy.

If we were to adopt one more grade we might have a few cases of sections with all the cells sealed next to the wood, and these would be called "extra fancy." If commission men would pay more for such goods it would pay well to have a fourth grade. But Mr. Niver believes three grades are enough, and I am not sure but he is right.

The other section, showing the specimen of raspberry honey, is a rather poor one in point of color, although "fancy" in point of filling. When it was held up before the light the beautiful purple raspberry could be seen in it, presenting a very handsome appearance—an effect than can by no means be produced through the medium of the camera. I had hoped that it would show up a little better. As it is, it shows only how the bees placed the raspberry honey, calico fashion—or perhaps, more strictly speaking, raspberry juice. It goes to show that bees have a preference for putting honey of a kind in patches, rather than making a checker-board, as it were—a cell of one kind of honey and a cell of another kind side by side. Mr. Niver had quite a number of these beautiful sections; and when placed in a display-window, where the light could shine directly through, he said they would be taken up like hot cakes. They were a sort of novelty that the consumers wished to test.



And they come to Jesus, and see him that was possessed with the devil, and had the legion, sitting, and clothed, and in his right mind.—MARK 5:15.

There has been no end of discussion in regard to this matter of demons, demonology, and being possessed of devils; and the general opinion seems to be nowadays that devils do not take possession of human beings as they did in olden time. In our text above we are told that the poor unfortunate, who had been possessed with a devil, or, rather, who possessed a legion of devils, was found sitting, and clothed, and in his right mind, and listening to the teachings of Jesus, who by his word had rebuked and cast out all the evil spirits; and, blessed be his holy name, he does, even at this present day and age, rebuke and cast out devils of every sort. By the way, I have been bantered a good deal because I believe in the existence of devils as well as in that of angels. Not only skeptics but professing Christians laugh at my "superstition," as they term it, in regard to the power of the evil one. Well, it seems to me in these latter days that, if certain people are not possessed with evil spirits, they are certainly possessed with something that may well frighten the humanitarian and the one who is hungering and thirsting after righteousness. As an illustration, within a year or two past a new phase of suicide has come in, and seems to be growing. I allude to the suicide who murders somebody before he kills himself. Some nice young woman refuses to marry a certain young man, perhaps because he is intemperate and dissolute. He urges his claim. Then his love for her, which he has been claiming has been as a consuming fire, turns in an instant to hate, and he murders the being he loved, or says he loved, more than he did any one else on earth. After this he shoots himself, or puts an end to his life in some other way.

It is not always a jilted suitor who becomes possessed with this kind of devil. We hear of it here and there in the family circle. The father and mother get into a wrangle over some trifling matter. Both, for the time being, become possessed with a devil—at least that is my decision after studying many cases of this sort. The father winds it up by shooting the dear wife and then putting an end to his own existence. My impression is, after having studied cases of this kind, that neither one of them had any particular grievance when they started into the little quarrel. I do not believe the husband thought of killing himself at all when he shot his wife. When he stopped to realize that the awful deed was really done, Satan seems to have whispered, "Better wind up the whole matter by putting yourself out of the world also. It is a miserable sort of world, anyhow." And before he has had time to reflect or think, he too is the victim of this devilish work.

For quite a while I was entertaining some hope because *womankind* does not go to such lengths. But within a few days I have been appalled to notice that murder and suicide are getting a hold on women as well as men. Even *mothers* have murdered their children, and then put an end to their own existence. People who try to make it appear that it is not Satan's work say, "Why, the poor woman was crazy. She was no more responsible for the act than you and I." But, hold on, my friend. There is something in this work that, at least in my mind, throws out the excuse of insanity. *Anybody* is liable to become insane. But such things are comparatively few and far between—too few to admit of the explanation that two people accidentally became insane at the *same moment*. I allude to the double suicides. Why, it is almost getting to be the fashion for *two* (if that is not a proper word, supply a better one yourself) to commit suicide together. There are quite a few cases showing that man and wife talked the matter over, and deliberately decided to destroy themselves.

Within a few days the most horrible thing of this kind has come to light that anybody ever heard of so far as I know. A husband and wife somewhere out west had decided to commit suicide; but before doing so they proceeded to put to death their family of three or four children. Now, as if what I have been telling you were not enough to indicate that Satan himself had taken possession of this father and mother, the papers tell us something still more heart-rending. The neighbors heard the children's cries, broke into the house, and found the parents had wrapped them up, *saturated the wrapping with coal oil*, and then *set fire to them*. I decided once not to put any thing so horrible in print; and I do it now only because it is the strongest proof that both men and women do get possessed of devils, or of a devil, even in modern times, that I ever heard of. I think we may honestly say that such work is not only of the Devil, but that it is absolutely hellish. If only *one* of the parents did this we might excuse him on the ground that it was insanity; but how could two people both become insane at one and the same time? and how could both father and mother, under any circumstances, so far lose the natural instincts of the human race as to proceed deliberately to murder their own offspring, and in a way that fairly makes one's blood run cold to consider it? Please consider further that no laws can be passed to reach cases of this kind. You can not frighten a criminal who has determined in his own mind to commit suicide, because neither hanging nor electrocution would be any punishment for the very thing he had proposed to do without law. These murders and suicides that are going on together are *outside* of law, and exempt. When a man gets this into his head he may safely defy law; and that is what they do do. *Law is powerless*, and therefore our only hope rests in the gospel of Christ Jesus. Booker Washington, in a recent address, in considering this lynching business, calls attention to the fact that every colored

man who has been guilty of this nameless crime was ignorant, and entirely uneducated. He calls attention to the fact that, when the colored people are educated and Christianized, this thing will be cured. I have not learned the history of this father and mother of whom I have been telling you; but my impression is, an explanation will be found *somewhere* behind this terrible state of affairs. One of the children has died, but the others will probably recover, so we are told.

Some of the friends who wish to put all of the blame on trusts and like corruptions of modern times say these people were driven to the terrible act by poverty—could not get work. But the suicides are not confined to the needy poor by any means. People in all classes of society are guilty. Even millionaires, quite a few of them, have thrown away and trampled in the dust that precious God-given gift, a human life.

Those who really love the human race, and are interested in the general progress of the age, lament these things, and are looking for a remedy. What is the matter? You know, of course, that I would suggest that our text explains it, and gives the remedy in one sentence. But sad it is, I know, that we are obliged to confess this terrible work is not confined alone to skeptics and unbelievers. Quite a few church-members commit suicide. I do not now remember a minister of the gospel being guilty of such a crime, but I presume there may be such cases. In olden time, Jesus, and he alone, had power to banish demons, and it rejoices my heart to be able to say, without any fear of having made a mistake, that the gospel of Christ Jesus is fully able to correct all of these things even now; and I do not know of any thing else in this whole wide world that can cast out these particular demons. "There is no other name given under heaven among men whereby we must be saved."

Why do professing Christians commit suicide? Many times it seems as if the only explanation to be given is that their mental or physical sufferings are such they can not bear them; that they were driven to it by pain, or that they were no longer responsible. Now, I do not want to be harsh nor uncharitable; but I can not help feeling and saying that one who is truly hungering and thirsting after righteousness will never for a moment listen to Satan's suggestions under any circumstances. There are half-hearted Christians; there are selfish Christians; but one who has said in his heart,

Jesus, I my cross have taken,
All to leave and follow thee,

will never think of throwing away the life that God gave. If we belong to Christ we are not our own, and self has no standing-place. It is the selfish man or woman who listens to Satan's suggestions in this line. Who ever heard of a missionary who gave his life for the good of humanity, committing suicide? Who ever heard of such a thing? Why, the idea is incredible. It is preposterous; and every child of humanity who has permitted thoughts of this kind to come into his mind

should be warned that he is leading a selfish life. Selfishness is *death* to any one. Living for the good of others is *life*, and life everlasting.

The demons that prompt these terrible deeds get into the human heart, many times, through strong drink; but I am led to believe that oftener still they come through spite, jealousy, or anger. A few months ago a physical epidemic was sweeping over the land, and it was called grip. It is a comparatively new thing, but no imaginary thing, as you and I both suffered by it. I am inclined to believe there are things that belong to the moral and spiritual world that sweep over humanity in much the same way. I have been moved to write these very words by feeling that possibly Satan was being granted more power, or, if you choose, unusual power, in these latter days. They say a crazy man is more vicious toward his best friends than toward anybody else. He is more likely to murder the dear wife and children who have borne with him patiently, and cared for him long years. By the way, it would be a great mistake to say that *all* insane people are responsible or partly responsible for their insanity; but I am satisfied in my own mind that a great many cases of insanity come just from yielding to temper, or, if you choose, to Satan. We are admonished in Holy Writ that Satan will have more liberty for a time. I do not know but this time is coming. With all our wonderful discoveries in the arts and sciences, with our telephones, X rays, and wireless telegraphy, it would seem strange that *Satan* should be making progress also. But this same Bible tells us he is generally on hand.

Now, it seems strange and incredible to me that a veteran, or at least something of a veteran, in Christian warfare, should be tempted of the Devil. Sometimes during these beautiful spring days I become very tired. Sometimes combinations of circumstances seem exceedingly perplexing. I become vexed at humanity; yes, may God forgive me when I admit that at times I feel tempted to be harsh and unkind to the dear partner whom I love more than any thing else on earth. I would not say this did I not feel it might be helpful to some of the other fathers and also to the mothers in the home. Sometimes a very little thing vexes me in a way that I can not understand. Something seems to say, "Do this," or "Do that," or to say that harsh, uncalled-for and ugly word. I did not say it, dear reader, and may God be praised for so much. Well, I have sometimes looked with wondering horror at the suggestions it seems to me some evil spirit must have whispered in my ear. In Pilgrim's Progress, Christian is feeling troubled at the awful words that he is compelled to think he has uttered when passing through the dark valley; but a great and wise friend told him not to worry; that the prince of darkness was in the habit of whispering words over the Christian's shoulder, and by his skill and dexterity making him verily believe that he (the Christian) himself was guilty of the blasphemous curses. I have had such experiences; and were it not for that lit-

the prayer, "Lord, help," I might have been so foolish as to hurt and harm those about me by speaking out when I was faint from lack of sleep or perhaps from want of food.

Now, dear brother and sister, these new and terrible temptations are in the air. First the thing breaks out in your neighborhood and then in mine; and before people get over one shock another terrible thing startles community. It behooves Christian people and everybody else to be more on the alert and more on the watch. I do not know what happens after death; but I do feel sure that every perpetrator of these horrid crimes finds, when he has passed to the great unknown beyond, that he has made a terrible mistake. Why, even *young* people are guilty of the crime of suicide. Boys and girls in their teens have been victims of this awful craze. In looking over the circumstances (and God knows I have done it only in order to get at the root of the mischief) it seems to me many times as if the boy or girl, as the case might be, intended to get even with somebody by this awful act. A certain girl wanted to go to some questionable place of amusement, but her mother refused to let her. She made some sort of threat that her mother did not understand. At that moment Satan, who is always lurking near, takes possession of the child's heart. She was possessed with a devil. The devil said, "But won't your mother be sorry when she finds out what she has done? and won't it make a stir in the neighborhood; and won't people be sorry that they trifled with you as they did, when this comes out? Just let them see that you are not one of the kind that can be tamed down by parental rules." A boy gets angry at his father. Satan persuades him, while his young heart is full of hard and bitter feelings, that he can strike a worse blow by an act of this kind than he could possibly strike in any other way. The rage and anger in his heart are fanned to a flame. Before he stops to think, and without considering the matter over night, or perhaps without considering it *one single moment*, the poor child seems to have lost all sense and reason, and his life is gone. Our text tells us the demoniac sat at the feet of Jesus, clothed, and in his right mind. Jesus made him a reasonable being instead of a maniac. Oh how I do love *reasonable* people—people who are fair, honest, and upright! How I do love people who are not biased and prejudiced—people who are not warped out of their better judgment by little spites and jealousies, and things that are coming up almost every day! Jesus, and he alone, can make people reasonable; can help them at all times to use the *good common sense* that is a gift of God. I myself am often tempted to be unreasonable. My natural vehemence is a good thing; it is one of God's gifts; but when it prompts me to push ahead, right or wrong, or just because I have got started in a certain line, then it is a *bad* thing. At such a time the dear Savior helps me to put on the brakes, and to ask myself the question, "Look here, old chap, are you yourself, just now, sitting at the feet of Jesus, clothed, and in your right mind?"



GROWING BASSWOODS FROM THE SEED.

For more than twenty years, off and on, I have been trying to get basswood seeds to grow as we get other seeds to grow. I have planted them in the fall, from the time of dropping, clear up to freezing weather; and I have planted them at all times in the spring, but with almost no success, except that where our rich plant-beds for gardening ran up under the basswood trees the little trees would come up themselves. In one case this spring, where the ground was almost covered with seeds, I had a bed spaded up, I think it was in March; but before we got time to sift it, level it, and plant it, a big rain came on, and the bed lay in that condition till April, and the little basswoods came up so that they averaged only from three to four inches to a foot apart. Another thing, where the basswood seeds fell on to the stone flagging under the trees, and rolled down into the crack between the flagging and one of the boards of the plant-bed, they came up through this crack quite thickly. Two years ago we sowed about a peck of seed on perhaps four rods of ground. They were sprinkled in drills touching one another; but not a dozen trees came up the following spring. When we felt sure they were not going to grow we sowed asparagus on the bed, and thought no more about the basswoods. Well, it was two years ago last fall that we sowed the basswood seed, so our asparagus roots are now two years old this spring. After the ground was pretty well shaded with asparagus shoots, the boys told me the little basswood-trees were thick down under the foliage. It made me think of the text, "Cast thy bread upon the waters," etc. From this incident we learn that basswood seeds may grow, even if they do not come up the first year or the second. I have been wondering if cracking open the hard shell that incases the seed might not assist germination. In the forest, under the leaves, this hard shell seems to decay or rot—possibly from prolonged dampness under the leafy covering. But even in the forest, only one seed in a hundred or one in a thousand germinates. I found a tree in the woods a few days ago that stood down near a mucky swamp, where the ground was quite damp and rich, and perhaps a hundred young basswoods were under this one little tree. I looked over the piece of woods pretty thoroughly, but I found only a dozen or less under most of the trees. We succeeded in getting pretty nearly a thousand out of the asparagus-bed, and more seem to be coming, even at this late date, May 18. Can anybody tell us how to get 50 per cent or even 25 per cent of the seeds to germinate?

This much I have settled: Basswoods grow with much more vigor on well-manured rich ground, especially ground that has been manured for many years, so that it is old, black, and rich. Under such conditions I have had

little trees grow three feet high the first season. We take them up from our plant-beds, from under the trees, or wherever we can find them, and set them out as we do cabbage-plants, putting them about four inches apart each way. Of course, where they are put so close as this they should be planted further apart the second year; but we sell a great many of them, one foot and under, to be shipped by mail.

FARMING WITH GREEN MANURE.

I notice that more than usual attention is being given of late to bringing up the soil by turning under crops, especially since cow peas, soja beans, crimson clover, etc., have been used for this purpose. Some years ago we purchased great quantities of manure at our livery stables; but it made our potatoes so scabby that I have of late been getting the ground in condition by turning under clover, both crimson and red; also rye, and this spring, even wheat. I have for many years back noticed the advertisement of a book entitled "Farming with Green Manures." After sending for the book I was surprised to notice that it was first published in 1876. Well, some of its statements are most astounding. It discusses, of course, turning under various crops to improve the land. In regard to rye, we find that it is rated, ton for ton, at nearly the value of barnyard manure. Now, fifteen tons of green rye per acre is not a large crop, and it is estimated that barnyard manure can not be drawn and spread for less than \$1.50 per ton. But the author figures that barnyard manure will cost more than *twelve times* as much as the rye. I do not know but I should call a ton of green clover, counting roots and all, worth as much as a ton of barnyard manure; but I am sure it is a mistake to figure rye anywhere near the equal of clover. Rye can be grown in eight months, or a little more; crimson clover in nine or ten months; red clover takes a year or more. Well, even if this book is old it has interested me "exceedingly." In the preface for 1893 I find the following:

Thirty years ago, before the bugs came, I raised over nine hundred bushels of potatoes to the acre under straw about fifteen inches deep. But I can not do it now. This year I tried it. The battle with the bugs almost destroyed the crop.

In the last chapter of the book the author shows that, where potatoes are grown under straw, the straw must not be tramped, as it damages the roots of the potatoes; and the modern Colorado beetle necessitates tramping through the field.

Well, we have more than an acre of orchard that contains the biggest growth of dandelions and timothy that I ever saw on any ground. We formerly grew, between the apple-trees, market-gardening stuff, therefore the ground is very rich. Well I wanted to get rid of those dandelions, but I did not care to put a plow into the orchard, as the trees are so large. Almost in the middle of the orchard is a big strawstack, left over from our wheat crop last year. After I found that some of our neighbors had seen potatoes grown under straw, when they were simply laid on grassy sod, I

decided to try the experiment. I stretched a line and dropped the potatoes right in among the dandelions, after first rolling them down flat. Then we piled on straw all through the orchard until not a dandelion was visible; and I mean to keep on straw enough to *keep* them invisible. I do not fear the bugs very much. As we killed them so thoroughly last year I do not believe they will trouble us; and at present writing, May 18, we have potatoes a foot high, and almost not a bug.

Since getting the straw in place I begin to see why people do not practice growing potatoes on straw more than they do. In our locality the straw is worth something; and when you get at it you will find it is quite a bit more work to plant an acre under straw than it is to get them in with a good team in the ordinary way. I think I shall not worry about the expense of digging until I find out we have got some to dig; but if I can convert that great mass of dandelions into manure—roots, tops, and blossoms—there certainly will be material for a good crop of potatoes—at least according to Harlan, the author of the book that has been more interesting to me than was even Robinson Crusoe when I was a boy—I mean the book called "Farming with Green Manures," by the O. Judd Co.

NITRATE OF SODA FOR RHUBARB, ASPARAGUS, ETC.

Friend Root:—I am a gardener on a small scale; but, as in bee-keeping, I experiment a good deal. Within a few years I "got on" to the effect nitrate of soda has on certain kinds of vegetables, such as asparagus and rhubarb. We set about a dozen roots of rhubarb; but, though it was heavily manured, it did not put forth that heavy growth and the large stalks that I wanted to see. One morning, while it was raining quite hard I put about two quarts of nitrate about the roots, scattering it over the ground. In about two weeks the rhubarb took on a rapid growth, and I never saw any thing like it. We now have all the rhubarb-plants we need.

Like the rhubarb-plants, our asparagus was set and very heavily manured. It came up and did very well for a few years; but, though it was well taken care of, the weeds kept down, and manure applied each year, the shoots gradually grew less, and in some places no shoots came up at all. Last spring I said, "Let us try nitrate of soda." We did so, and inside of two weeks there was a visible improvement. New shoots came up in all the rows, and in some places the stalks came forth where it seemed to me there had been none for two seasons. Why, as late as in September the new shoots continued to put out. When fall came we had the best and thickest set asparagus-bed hereabout.

I notice that nitrate of soda works just as well on raspberries and blackberries; but on strawberry-plants I do not see quite as good results—in fact, no results at all. I shall use nitrate of soda largely on all the above plants in future, and shall be glad to hear through GLEANINGS your experience on the above.

Wenham, Mass., April 10.

HENRY ALLEY.

☞ *Friend A.*, I have failed so much with nitrate of soda I had about given up making experiments; but I will try it at once on our rhubarb. But is not two quarts to twelve plants rather expensive fertilizing? With a good market it might pay, and I shall be greatly pleased if even that amount will make even a perceptible difference with our rhubarb.

COTTON-SEED MEAL AS A REMEDY FOR POTATO BUGS.

A friend, who is strictly reliable and careful, tells me he has been using, the past two years, cotton-seed

meal as a fertilizer on potatoes, and has had no bugs to bother, and they are grown on the same ground where he has been troubled with the Colorado beetle for many years. He is using it again this year, and thinks it a sure preventive. The meal is put into the row with the potato, and covered all together.

Winchester, Ky., Apr. 21.

JNO. S. REESE

I may be mistaken, but I hardly think it was the fertilizer applied to the potatoes that kept the bugs away. Had your friend applied the cotton seed on one half of his patch, and found the bugs mostly on the other half, the experiment would have been more conclusive. In our locality, some seasons there are almost no bugs at all, especially if they have been thoroughly killed the year before. Our experiment stations will be glad, I am sure, to test the matter, and perhaps they have tested it.

THE EARLIEST STRAWBERRY.

To-day, May 30, we are making about our first picking in the open field; and the Earliest, as before, stands a good way ahead of any thing else. On our grounds we find it even ahead of Darling; but the originator thinks Darling is a little the earlier of the two. I am surprised this season to find the Earliest bearing good-sized berries, and they are growing in a thick matted row at that. It does not give as many berries as the later ones, and they are pretty strongly acid in flavor, and perhaps rather soft to handle. But they give us quite a lot of berries two or three days before any thing else. Last year the Rio crowded close on the Earliest; but this year they are more behind. Now, another thing must be taken into consideration: Rich soil and close planting makes berries later. Right alongside our row of Earliest are some Warfields. On good ground none of the Warfields are ripe; but on a little piece of yellow ground where the top soil had been removed, the ground is so poor that the plants are scattering, and small at that. Here the sun had got in, and we found quite a lot of dark garnet-like Warfields glistening through the dew-drops in the morning sunshine. You can make any berry earlier by putting it on poor ground and having the plants far apart so the sun can get in easily. I thought once we would not plant any more Earliest, as they bear so few berries; but I have just given the boys orders to put down the runners around the edge of the patch, and before we get ready to plow them up we shall have plants enough to make a row or two for next year; and the plants must be thinned out and given room if you want Earliest to be *extra* early.

Humbugs and Swindles.

THE ARCTIC REFRIGERATING-MACHINE.

The above is the name of an apparatus guaranteed to cool refrigerators at an expense of 75 per cent less than ice. Quite a little circular describes the discovery, and tells about the "Arctic" compound that goes with the machine. There are a great lot of references; but they give as an excuse for not giving the

postoffice address with these references that it annoys the owners of the machines too much to answer the questions and show the machine; and—their way of doing business is cash in advance—no exceptions made to anybody. I wrote them a pleasant letter, telling them I was willing to send them cash in advance, but I should first like references in regard to their standing, such as we were ready to give them in regard to ours. They replied flippantly, that the fact that they were permitted to do business through the United States mails was a sufficient guarantee of their reliability, and that, if I was afraid to risk sending them money, they preferred I should keep it. Now, if an ice-machine can be bought for \$15.00 that will keep a refrigerator cool enough to freeze water, at a cost ever so much less than that of ice, I was determined to have it, and so I asked our representative in Cincinnati to call on the Arctic Refrigerating Co. They (the one clerk found in the office) put him off in a good many ways, and finally told him they had not a machine in their possession to show to customers, and that they were going to move away soon anyhow. Oh dear me! I have wanted a little ice-machine, and one that would not cost much to run it, all my lifetime. And now I can not have it, even when my money is all ready. I told the firm I would give them the biggest kind of advertisement, free of charge; but they did not appreciate my kind intentions at all. But you see I have given them the advertisement all the same; only be sure *not* to send them any money. And, by the way, do not send any money to *anybody* who refuses to let a responsible party examine a machine before paying for it. I was overpersuaded not many months ago to send money to a Cincinnati firm—one that did not do business unless they had cash in advance. I did it in trying to help a third party. They made many promises to send the money right back if the article did not give perfect satisfaction; but after they got the money they somehow lost *interest* in the matter.

Later.—We find the following in the *Cleveland Press*:

Cincinnati, O., May 26.—W. B. Preston was arrested yesterday charged with using the mails with intent to defraud. He offered a refrigerator for \$7.00, which he said would save 75 per cent of the cost of ice by a secret chemical process. The machine consisted of four pieces of galvanized iron and a faucet, and the chemicals are glauber salts and sal ammoniac on the ice, both common in commercial use. He gave bail.

The above is, without question, the party I have been corresponding with. The picture of the machine has quite a taking look; but their wonderful discovery—why, when I was a boy in my teens, studying chemistry, glauber salts and sal ammoniac were used for the very purpose of producing a freezing mixture, but it cost ever so much more than to procure ice in the usual way.

Alexander McLaren says in the *Sunday School Times*:

"We may live in a republic, and yet be slaves; for liberty consists, not in doing what we like, but in liking to do, and in doing, what we ought."